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STATE OF COLORADO
BUREAU OF MINES

State Capitol, Denver

JOHN T. JOYCE, Commissioner of Mines

ANNUAL REPORT FOR
THE YEAR
1924



Denver, Colorado
Bradford-Rohrer Printing Co.
1925



STATE OF COLORADO
BUREAU OF MINES

State Capitol, Denver

JOHN T. JOYCE, Commissioner of Mines

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ANNUAL REPORT FOR
THE YEAR
1924



Denver, Colorado
Bradford-Robinson Printing Co.
1925

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LETTER OF TRANSMITTAL

To His Excellency,

THE HONORABLE CLARENCE J. MORLEY,

Governor of Colorado.

Sir: In compliance with Section 3392 of the Compiled Laws of Colorado, 1921, I have the honor to transmit herewith the Annual Report of the State Bureau of Mines for the year 1924, including the Financial Report for the biennial period 1923-1924.

Respectfully submitted,

JOHN T. JOYCE,

Commissioner of Mines.

State Capitol,
Denver, Colorado,
May 29, 1925.

PERSONNEL OF THE BUREAU OF MINES OF THE STATE OF COLORADO

JOHN T. JOYCE, Commissioner of Mines.....	Denver
T. R. HENAHEN, Inspector, District No. 1.....	Denver
M. J. McCARTHY, Inspector, District No. 2.....	Canon City
R. J. MURRAY, Inspector, District No. 3.....	Salida
ROBERT INNES, Inspector, District No. 4.....	Montrose
MISS ETHEL M. FLANDERS, Chief Clerk.....	Denver
MRS. A. M. NICKERSON, Stenographer.....	Denver

DISTRICTS OF INSPECTION

DISTRICT No. 1.—Moffat, Routt, Jackson, Grand, Larimer, Boulder, Gilpin, Clear Creek, Jefferson, Denver, Weld, Adams, Arapahoe, Morgan, Logan, Sedgwick, Phillips, Washington and Yuma Counties.

DISTRICT No. 2.—Douglas¹, Elbert, Teller, El Paso, Fremont, Custer, Huerfano, Las Animas, Pueblo, Lincoln, Kit Carson, Cheyenne, Kiowa, Crowley, Otero, Bent, Prowers and Baca Counties.

DISTRICT No. 3.—Rio Blanco, Garfield, Mesa², Delta, Eagle, Summit, Pitkin, Lake, Park and Chaffee Counties.

DISTRICT No. 4.—Montrose, San Miguel, Dolores, Montezuma, Ouray, San Juan, La Plata, Gunnison³, Hinsdale, Saguache³, Mineral³, Rio Grande, Alamosa, Archuleta, Conejos and Costilla Counties.

¹ The northern part of Douglas County has been temporarily transferred to District No. 1.

² The southwestern part of Mesa County has been temporarily transferred to District No. 4.

³ That part of Saguache County lying east of the Continental Divide, the northern part of Gunnison County and Mineral County have been temporarily transferred to District No. 3.

FINANCIAL STATEMENT

1923-1924

RECEIPTS

Appropriation for the fiscal years 1923-24—

Salary, Commissioner	\$ 6,000.00	
Salaries, Inspectors	18,780.52	
Salary, Clerk and Assistant Curator....	3,469.34	
Salary, Stenographer and Asst. Clerk..	2,869.35	
	<hr/>	\$31,119.21
Traveling Expenses, Commissioner.....	\$ 3,200.00	
Traveling Expenses, Inspectors.....	14,400.00	
	<hr/>	17,600.00
Incidental Fund.....	\$ 2,000.00	2,000.00
		<hr/>
		\$50,719.21

DISBURSEMENTS

Salaries—

Commissioner	\$ 6,000.00	
Inspector, District No. 1.....	4,695.13	
Inspector, District No. 2.....	4,695.13	
Inspector, District No. 3.....	4,695.13	
Inspector, District No. 4.....	4,695.13	
Clerk and Assistant Curator.....	3,469.34	
Stenographer and Assistant Clerk.....	2,869.35	
	<hr/>	\$31,119.21

Traveling Expenses—

Commissioner	\$3,200.00	
Inspectors	14,376.37	
Unexpended Balance.....	23.63	
	<hr/>	17,600.00
Incidental Expenses.....	\$ 1,888.89	
Unexpended Balance.....	111.11	
	<hr/>	2,000.00
		<hr/>
		\$50,719.21

INTRODUCTION

The activities of the Bureau of Mines during 1924 were confined to the usual routine, no funds for any special work being provided.

The four inspectors visited practically all of the operating metal mines, quarries, mills, smelters and railroad tunnels at least once during the year. Most of the larger operations were inspected more than once. The object of these inspections is to eliminate, as far as possible, unsafe conditions and practices. In general, this work meets with the lively co-operation of the mine operators.

The Commissioner and Inspectors are anxious to help the mining industry in every legitimate manner and wish to be called upon whenever their services can be used.

Inquiries regarding the mines and mineral resources of the state and questions regarding the demand and market for less common mineral products are constantly coming into the Bureau. An earnest endeavor is made to furnish the information desired. Helpful co-operation is often received from the Colorado Geological Survey, the United States Bureau of Mines and the United States Geological Survey.

On account of lack of funds it has been impossible to give the State Mineral Collection the attention it deserves. During the past year several new specimens have been received.

The Commissioner takes this opportunity of expressing his appreciation of the loyal and efficient services that have been rendered by the entire personnel of the Bureau during the past year.

METAL MINING IN 1924

At no time in the past decade has the metal mining industry appeared more hopeful and promising than at the threshold of the new year, 1925. After weathering the most serious and discouraging period of its history the future dawns before those engaged in metal mining full of hope and promise.

The mountains of Colorado, from the plains through the foothills to their snow-capped summits, teem with mineral resources as rich as they are varied. Great veins and deposits of ore, rich in precious and base metals, abound in every section, and veins containing many of the rarer metals are not uncommon. Many of these veins and deposits are already known to exist in numerous properties more or less developed in every well known mining district of the state, but many of them were forced into idleness by the slump in the metal market following the close of the great war, while the unexplored surface, which has hardly been scratched, undoubtedly contains more veins yet to be discovered by the sturdy prospector than his pick and shovel have ever revealed.

The world is clamoring for their products, and every disturbing element which has retarded their progress for years and every obstacle which has obstructed their development and operation seem to have been swept aside as the year 1924 draws to a close. The demand for silver is increasing rapidly in all parts of the world, especially in silver using countries for financial purposes, while the arts and many other new purposes for which the white metal is now used are taxing the world's supply to such an extent that statisticians are prophesying a rapid rise in its price, before the new year is far advanced, that will exceed all records since the date of its demonitization.

The increasing demand for lead and zinc during the closing month of 1924 sent the price of these metals soaring to a new record—the price of lead advancing from an average of \$7.92 in January, 1924, to \$9.70 in December, and smaller lots selling at \$10.25 per 100 pounds. Zinc advanced from \$6.42 in January to \$7.70 per 100 pounds at the close of the year 1924.

Copper supplies are also gradually diminishing with an increasing demand and, as a result, the price of copper at the close of the year advanced to 15 cents as against 12.8 cents on December 31, 1923. The consumption and demand for all these metals will naturally keep pace with the rapid expansion of commerce and trade and their ever increasing usage in new inventions and advanced science.

The total production of gold, silver, copper, lead and zinc from the metal mines of Colorado, for the year 1924 amounted to \$18,448,716, divided among the various mining counties as

shown in the tabulation of metal production by counties inserted in this report.

By consulting the inserted Table No. 1, showing the production of the principal metals of Colorado in 1924, it will be seen that the six leading counties in total production were as follows: Teller first; San Juan second; San Miguel third; Lake fourth; Eagle fifth, and Summit sixth.

In the production of gold Teller was first; San Miguel second; Lake third; San Juan fourth; Summit fifth, and Park sixth.

In silver San Miguel was first; San Juan second; Lake third; Mineral fourth; Ouray fifth, and Eagle sixth.

In lead production San Juan first; Lake second; San Miguel third; Gunnison fourth; Custer fifth, and Summit sixth.

In copper production San Juan was first; San Miguel second; Lake third; Clear Creek fourth; Eagle fifth; Chaffee sixth, and Park seventh, the production of the latter being only 26 pounds less than that of Chaffee County.

While the total output of the metallic mines of the state for the year 1924 shows a slight decrease from the previous year, it must not be accepted as indicative of a corresponding decrease of activities in the various mining districts of the state during that period. As a matter of fact during the last six months of 1924 there was a marked increase of activity in every mining section of the state, greater than at any time since the suspension of silver purchase under the Pittman Act.

The year was quite well advanced before the mists began to clear and the mine operators themselves, as well as capital seeking legitimate investment, recognized the fact that the metal mining industry was awakening from the lethargy under which it had slumbered since the close of the war. The rapid rise in the price of industrial metals, silver hovering around 70 cents per ounce, with cost of mining gradually lowering, substantial advances made in the solving of vexed metallurgical problems, as reported by Professors Weinig and Warren of the Colorado School of Mines, and prospects of better smelting conditions, caused the return of the prospector to the hills, the reopening of old properties which had been forced into idleness, gigantic development enterprises such as the Canterbury Tunnel and the unwatering of deep mines at Leadville, the exploration of the deeper ore zones at Cripple Creek by the Cresson, Portland and other large concerns, new companies entering the fields, and money freer than it has been in the past decade, all of which were followed by remarkable new discoveries in almost every camp, demonstrating beyond all question that courageous development is all that is necessary to restore the metal mining industry of Colorado to its former greatness and place the state once more at the head of the list of the mining states of the Union.

Since the closing of the smelters at Denver and Pueblo the mine and mill operators of the counties of Boulder, Clear Creek

and Gilpin have been compelled to ship their products to the Arkansas Valley plant at Leadville for treatment, and while the railroads have fixed a very reasonable freight rate the transportation cost in itself equals and, in many cases, exceeds the margin of profit on low grade ores. This necessarily resulted in the cessation of operations of nearly, if not all, of the low grade mines of the above mentioned counties. With a few exceptions, they still remain idle and will continue so until the situation is relieved by the building and operation of a smelter, electric or otherwise, at Denver, Golden or some other central point. With a view to relieving this deplorable condition this Department took the matter up quite vigorously with the Wile Electric Smelter Company of New York and finally succeeded in inducing this company to consent to build a five-ton demonstration plant at Boulder to determine for their own satisfaction, as well as for the mine owners, whether such a plant could successfully treat the complex ores of these counties as well as other districts of the state. This company has upwards of 90 electric smelters operating successfully in other parts of the world and the Boulder plant now erected and ready to go will very soon demonstrate whether or not they can successfully operate here and, if so, they are prepared to enter the field, build their own plants where satisfactory contracts, particularly as to time and certainty of shipments, can be obtained. In this venture Mr. Wile and his associates should have the encouragement, support and hearty co-operation of the mine owners of the northern counties, as their interests are common and the success of one means the success of the other. In the construction of this plant the company has not sought or is it now asking for state or local financial aid. It has built its plant entirely and solely at its own expense. Thus, should it develop that the process can not operate profitably in this field on a commercial basis, none but the company itself suffers from the expense incurred by the experiment. While on the other hand its success means the rejuvenation of the mining industry in the counties mentioned and other sections as well and the resumption of mines that have been idle for years.

CONDENSED REVIEW OF THE MINING DISTRICTS

District No. 1, By T. R. Henahan

The condition of mining in District No. 1, after months of continued improvement, suffered a serious relapse in May, 1923, due to the expiration of the Pittman Act and the cessation of the purchase of silver under that Act.

This was more noticeable in the silver producing counties than in the counties of Boulder and Gilpin, where gold largely predominated in many of their producing mines.

Without national aid, such as the Pittman Act, the problem of mining development in this district is one susceptible only to local solution.

With only two smelters in Colorado, and a long up-hill haul, high prices for all mining supplies, and smelting charges, mining in this particular district is in a retarded condition, and today there are only two or three men working on mines that should be employing fifty. The most hopeful indication for relief from these conditions is the intention of the Wile Electric Smelter Co. of New York to enter this field and build an electric smelter at some central point to treat the ores of this district. A five-ton demonstration plant is now being constructed at Boulder to test in the most practical way the efficiency of their process to successfully treat the complex and refractory ores of the state. Its success will undoubtedly result in the return of old time activities in the mining counties of this district and other sections of the state which are remote from the Durango and Leadville smelters.

District No. 2, By M. J. McCarthy

Mining conditions in this district have shown more activity than at any time since the war, with every indication that the year 1925 will show still greater increase. The total number of men employed is approximately 3,000.

Custer County—There are thirteen metal mines and two clay pits in operation in this county, with a total of 175 men employed. The R. D. Webb Mining Company is operating the Terrible mine at Ilse. This is a lead producer and is the only mine in the United States producing phosgenite. The approximate production per month is about 400,000 pounds of the finished product, with an average value of about \$135.00 per ton. Several smaller properties in this county produced this year.

Douglas County—There are three clay mines in operation, making a production of 3,600 tons per month.

El Paso County—The Golden Cycle Mining and Reduction Company is employing 170 men in the mill and their average production from the plant is about 850 tons per day. There are two lime quarries and one lime kiln operating in this county.

Fremont County—The River Smelting and Refining Company is employing about 140 men. The Empire Zinc Company has a force of 250 men and is producing 3,500 tons of concentrates and 800 tons of oxides. In addition to the foregoing there are two cement plants, four stone quarries, twelve limestone quarries, two brick plants and one spar mine operating.

Las Animas County—The Trinidad Brick and Tile Company is employing 30 men in their shale and clay pit and their brick plant.

Pueblo County—The United States Zinc Company at Blende is employing about 65 men and makes about 9 tons of finished product per day. There are also operating in this county three

clay mines, two brick plants, three lime quarries and one stone quarry.

Teller County—There has been an increase of activity in the Cripple Creek district during the past year. A total of 46 mines are operating, employing 950 men. The production of ore from the Cripple Creek district to the Golden Cycle Mill at Colorado Springs is about 700 tons per day, or over \$400,000.00 per month. The Portland Gold Mining Company employs 240 men, and has completed its shaft to a depth of over 3,000 feet. The Cresson Consolidated Gold Mining Company employs 230 men and the production is about 10,000 tons per month. The Granite Gold Mining Company employs about 70 men, and is producing better than 700 tons per month of gold ore. About 54 company men and 13 leasers are employed on the American Eagle's mine. In addition to the above mentioned there are several other properties in the district which are active.

District No. 3, By R. J. Murray

There was a noted increase of activity in nearly all of the mining camps of District No. 3 during the year 1924.

Chaffee County—The stone and monumental granite quarries have been very active this year and have turned out material to capacity and several more contemplate quarry operations in the near future.

Eagle County—The Empire Zinc Company is shipping about 600 tons daily of sulphide iron for silver values. The Polar Star operated steadily and development work was done on many other properties.

Garfield and Mesa Counties—Test work on oil shale property was the principal feature for the year. The vanadium mill is operating at Rifle on dump ores at present. In Garfield County two limestone quarries operated near Glenwood Springs.

Gunnison County—The marble companies are very active and are mining a great deal of stone. The dressing plant is running almost to capacity.

Lake County—There is quite an increase of activity around Leadville. The unwatering of a group of sulphide mines in Graham Park has been completed by the Deep Mines Company. When the mines are reopened it will probably give employment to 300 or 400 men. Several shipments of high grade ore have been made from the Jonny mine. One shipment of less than five tons brought \$179,800.00. About 75 tons of ore is being shipped daily from the Yak. In California Gulch the A. Y. and Minnie and a number of producers of siliceous iron-lead ore have been operating. The A. V. has shipped a fair tonnage of manganese ore and the Hagerman on Yankee Hill has been a persistent shipper of iron ores. The Star and Waterloo have also shipped

considerable iron and lead ores. The Izard has worked continuously, shipping a good grade of lead ore. The St. Louis Tunnel and the Penfield have reopened. The Climax Molybdenum mine at Climax about 15 miles north from Leadville resumed operations in September, 1924. About 50 men are employed and they are handling from 4,000 to 5,000 tons per day at their mill which has a daily capacity of about 750 tons. The mine is well equipped for a heavy future production. A small amount of leasing has been done on Breece Hill and some ore is being shipped from there. Fryer Hill has been active, with a number of leasers who have taken out iron and silver-lead ores. The Blaine has been a consistent shipper of zinc oxide ores. The Western Zinc Oxide Company and the smelters have been operating part of the time with reduced furnaces. They are handling a lot of ores from all over the state and from outside the state. The Canterbury Tunnel, one of the greatest and most important undertakings in the state, has been steadily pushed ahead. Its completion means a new and greater Leadville.

Mineral County—A great deal of development work was under way in this county preparing for a production in 1925. The Colorado Fuel and Iron Company took over the fluorspar mine at Wagon Wheel Gap.

Park County—The London mine and the Sweet Home were steady shippers. Other smaller properties have been operating and doing development work. The South Park dredge has operated continuously.

Pitkin County—The Newman Tunnel, Hope, and the Veteran Tunnel were the principal operating mines during the year. There are several properties in this county doing development work. The Aspen Smelting Company, operating through the Cowenhoven Tunnel, recently purchased the Smuggler sampler and mill and is preparing for a future heavy production.

Saguache County—During the month of December a shipment of 5,000 tons, a special order, was completed from the Orient mine. Ordinarily, about 300 tons of iron ore is taken out every month. The Cocomongo has resumed operations under H. H. Utley, Trustee, and is milling about 10 to 12 tons of zinc and lead concentrates daily. The Baltimore and several other small properties are operating in this county.

Summit County—The Wellington mine was reopened and development work is being carried on. The Royal Tiger has completed its mill, having a capacity of about 130 tons per day. There are a number of leasers operating in Montezuma and some shipments have been made. The Detroit is a consistent shipper of high grade silver-lead ore; also gold and some zinc ores. The Warriors Mark, Missouri, New Extension and many other properties were operated during the year. The two dredge boats have been shut down for the winter months.

District No. 4, By Robert Innes

Mining activities have been more than normal during the year 1924. All of the old producers have maintained their usual production, with increased production in some instances. Some old mines, inactive for several years, have resumed operations and several good strikes in new and old properties have been made, which would indicate more activity during the coming year.

So many mines in the San Juan district contain silver-lead and zinc ores, for which there is a demand at good prices. We feel that some of the investment capital now turned loose will reach these districts and enable them to open up their mines.

Following is a list of the most active operations in the district during the year under review:

Archuleta County has good mining possibilities, but only prospecting and assessment work have been done.

Dolores County—The Falcon Lead Mining Co., operating several properties, was the principal producer. The Mt. Pleasant Mining Co. near Dunton employed a large force of men on development work.

Gunnison County—The Akron Mines operated continuously, making regular shipments. The Morning Star Group, lessees on the North Star, the Towne-Eastman Lease, the Tennessee-Colorado Development Co., were in operation during the year, and the Roosevelt Tunnel is advancing rapidly towards the Midnight and Camp Bird veins. Owing to a shortage of efficient labor, operations were practically discontinued at the Carter Mines early in the year. A small force of men was kept at the property to keep the mine in repair and do development work.

Hinsdale County—There was considerable activity here. The San Cristobal Mining Co., lessees on part of the Golden Fleece mine, opened a chute of high grade tellurium-petzite ore. Also the Lillie mine, the Dick Kilvert, the Belle of the West in the Lake mining district, the Goleonda and the George the III mine were operating, besides development work on several other properties.

La Plata County—The May Day mine, the Idaho, the Jumbo and the Little Nona group were the principal operators during the year. The Durango smelter treated 5,000 tons of concentrates and crude ore monthly during the year. A new and larger furnace has been installed. The sulphating plant (Coolbaugh process) has been taken over by the company and will be used to treat custom ores. The Bell lime quarries, near Rockwood, have been producing 700 tons of lime rock monthly for the Durango smelter.

Mesa County—Some high grade radium ore was produced by lessees at Calamity Camp in this county.

Ouray County—The Thistledown, the Wanakah, the Gustin at Red Mountain, The Eva group on Dexter Creek and the Khe-dive Tunnel are the principal mines operated during the year. Many old and new properties are preparing for heavy operations in 1925.

San Miguel County—The Smuggler Union Mining Co. maintained its usual production of from 16,000 to 20,000 tons of ore per month during the year. The Tomboy Gold Mines Co., Inc., is treating 18,000 to 20,000 tons of ore in their big mill. Other operating mines were the Cimarron, contiguous to the Smuggler, the Butterfly-Terrible, and the Silver Bell at Ophir, the Alta at Turkey Creek and the Mountain Flower group in Deep Canon. Early in the year the Black Bear was closed down on account of litigation. It is expected that difficulties will be adjusted shortly and operations resumed. This mine contains one of the largest chutes of lead-zinc ore in the state and cannot afford to be closed down with the high price paid for these metals at the present time. The Carbonero mine at Ophir has been active during the year. Considerable development and preparatory work have been done in the mine and an aerial tramway and mill have been constructed. Recently the mill was turned over and should be in commission soon.

San Juan County—The Sunnyside mine at Eureka produced a monthly average of 18,000 tons of ore until October, when production was increased to 20,000. The mine has large ore reserves and capacity production will easily be maintained for a long time. The Little Nations Mining Co. discontinued production in March, but employed a small force on development during the remainder of the year. The Henrietta and Joe and John and the Philadelphia-Little Fannie group in Cunningham Gulch were active during the year, also the Kansas City group. The Pride of the West, the Old Green Mountain and the Highland Mary in Cunningham Gulch engaged in development work. The Gold King Mine at Gladstone was active a few months in the early part of the year. Development and repair work were done at the mine and the mill was put in repair. The mill was operated a short time, but operations were discontinued and have not been resumed. The best strike of the year was made in the Mountain Queen mine by Messrs. Babich, Dunk and Walker, Lessees, who opened up a 5-foot chute of silver-lead ore. This ore shipped direct to the smelter with little sorting is said to net \$40.00 per ton. As development advances the ore chute continues to hold to about 5 feet in width and the values are about the same as when it was first encountered.

HISTORICAL NOTE

The Bureau of Mines of the State of Colorado was established by an act of the Tenth General Assembly, approved March 30, 1895. This act repealed a previous act creating an "Inspector of Metalliferous Mines," which was passed in 1889. The Bureau of Mines law established the office of Commissioner of Mines, provided for in the State Constitution, and charged him, among other things, with the supervision of metal mine inspection and the enforcement of laws relating to safety and health in metal mines. Subsequently this was broadened to include "any ore mill, sampling works, smelter, metallurgical plant, rock quarry, clay pit, railroad tunnel, rock excavation or mine of whatsoever kind or character, except coal mines." The Commissioner of Mines was also charged, "as he has opportunity and means," to collect mineral specimens and exhibit the same, to collect books relating to mining and geology, to collect and preserve data regarding mining methods, mining costs, milling, metallurgy, geology, mineral deposits of all kinds, and so on. Aside from the purchase of the Elsnor collection of minerals, very little "opportunity and means" has been granted to the Commissioners for anything except inspection work. The present activities of the Bureau of Mines are treated elsewhere in this report.

COMMISSIONERS OF MINES

Harry A. Lee.....	May 11, 1895-May 10, 1903
E. L. White.....	May 10, 1903-May 10, 1907
T. J. Dalzell.....	May 10, 1907-May 10, 1911
T. R. Henahan.....	May 10, 1911-May 10, 1915
Fred Carroll.....	May 10, 1915-June 1, 1919
Horace F. Lunt.....	June 1, 1919-June 1, 1923
John T. Joyce.....	June 1, 1923-

PUBLICATIONS OF THE BUREAU OF MINES

BULLETINS

- Bulletin No. 1, Recommendations for Safety Appliances in Mining, Harry A. Lee, Commissioner of Mines, 1896.
- Bulletin No. 2, Precious Metal Production for the year 1898, Harry A. Lee, Commissioner of Mines, 1899.
- Bulletin No. 3, Mining Laws Relative to Bureau of Mines, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1899.
- Bulletin No. 4, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1901.
- Bulletin No. 5, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1902.
- Bulletin No. 6, Regulations Relative to the Construction, Equipment and Operation of Metalliferous Mines, Mills and Metallurgical Plants, Recommendations and Mineral Production for 1905, E. L. White, Commissioner of Mines, 1906.
- Bulletin No. 7, Federal and State Laws Relating to Mining, Fred Carroll, Commissioner of Mines, 1916.
- Supplement to Bulletin 7, Mining Laws Enacted by the Twenty-first General Assembly, Fred Carroll, Commissioner of Mines, 1917.
- Supplement No. 2 to Bulletin No. 7, Amendments to the Mining Laws Enacted by the Twenty-second General Assembly, Horace F. Lunt, Commissioner of Mines, 1919.
- Supplement No. 3 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-third General Assembly, Horace F. Lunt, Commissioner of Mines, 1921.
- Supplement No. 4 to Bulletin 7, Amendments to Laws Relating to Mining Enacted by the Twenty-fourth General Assembly, Horace F. Lunt, Commissioner of Mines, 1923.
- Bulletin No. 8, The Oil Shales of Northwestern Colorado, Horace F. Lunt, Commissioner of Mines, 1919.
- Bulletin No. 9, Mine Safety Standards, Horace F. Lunt, Commissioner of Mines, 1920.

REPORTS

- Report of Bureau of Mines, Colorado, from its establishment in May, 1895, to November 30, 1896, Harry A. Lee, Commissioner of Mines, 1896.
- Report for the Year 1897, Harry A. Lee, Commissioner of Mines, 1898.

- Report for the Year 1898, Harry A. Lee, Commissioner of Mines, 1899.
- Biennial Report for the Years 1899-1900, Harry A. Lee, Commissioner of Mines, 1900.
- Biennial Report for the Years 1901-1902, Harry A. Lee, Commissioner of Mines, 1903.
- Biennial Report for the Years 1903-1904, E. L. White, Commissioner of Mines, 1905.
- Biennial Report for the Years 1905-1906, E. L. White, Commissioner of Mines, 1907.
- Biennial Report for the Years 1907-1908, T. J. Dalzell, Commissioner of Mines, 1909.
- Biennial Report for the Years 1909-1910, T. J. Dalzell, Commissioner of Mines, 1911.
- Biennial Report for the Years 1911-1912, T. R. Henahen, Commissioner of Mines, 1913.
- Biennial Report for the Years 1913-1914, T. R. Henahen, Commissioner of Mines, 1914.
- Biennial Report for the Years 1915-1916, Fred Carroll, Commissioner of Mines, 1916.
- Biennial Report for the Years 1917-1918, Fred Carroll, Commissioner of Mines, 1919.
- Annual Report for the Year 1919, Horace F. Lunt, Commissioner of Mines, 1920.
- Annual Report for the Year 1920, Horace F. Lunt, Commissioner of Mines, 1921.
- Annual Report for the Year 1921, Horace F. Lunt, Commissioner of Mines, 1922.
- Annual Report for the Year 1922, Horace F. Lunt, Commissioner of Mines, 1923.
- Annual Report for the Year 1923, John T. Joyce, Commissioner of Mines, 1924.

At the time this report goes to press, there are available for distribution copies of the Biennial Report for 1915-1916, Annual Reports for 1919, 1921, 1922 and 1923, Bulletins 7, 8 and 9. The price of Bulletin 7, with supplements, is 50 cents, all other available publications are free. The supply of publications not mentioned above is exhausted, but copies may be found in many of the public, state and college libraries throughout the country.

Note:—The Colorado Geological Survey, Boulder, Colorado, has published a number of geological reports and maps, a list of which may be obtained from R. D. George, State Geologist, Boulder, Colorado.

TABLE I

PRODUCTION OF THE PRINCIPAL METALS IN COLORADO IN 1923 AND 1924

Compiled from figures by C. W. Henderson, Mineral Geographer, U. S. Geological Survey. Figures for 1924 are preliminary and subject to correction.

GOLD*				SILVER*				COPPER				LEAD				ZINC				Total Value	Increase or Decrease	County
1923		1924		1923		1924		1923		1924		1923		1924		1923		1924				
Fine Ounces	Value	Fine Ounces	Value	Fine Ounces	Value	Fine Ounces	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds		
Adams	16.50	\$ 341	40	\$ 827	3	\$ 2	7	\$ 4														
Boulder	1,313.19	27,146	1,228	25,385	39,556	32,436	17,444	11,670														
Chaffee	825.91	17,073	422	8,724	20,762	17,025	9,918	6,635														
Clear Creek	1,479.12	30,576	2,169	44,837	183,874	150,777	64,760	2,794														
Custer	122.68	2,536	160	3,307	28,484	23,357	20,152	43,318														
Dolores	139.79	2,890	20	413	39,408	32,316	9,917	13,482														
Engle	2,018.88	41,734	1,178	24,352	322,143	264,157	163,321	56,823														
Fremont	1.31	27			184	161		6,634														
Gilpin	1,412.35	29,196	644	13,313	44,942	36,852	6,961	632,565														
Grand					323	265		3,364														
Gunnison	1,157.94	23,854	781	16,145	24,939	20,450	66,353	44,390														
Hinsdale	35.41	732	25	517	3,046	24,638	17,083	1,788														
Lake	13,134.01	271,504	48,256	997,543	655,858	537,787	497,164	11,432														
La Plata	769.40	15,905	1,044	21,581	17,138	14,053	10,015	332,603														
Mineral	112.81	2,394	70	1,447	228,867	187,671	253,010	816														
Montrose	8.05	117	19	393	10,523	8,629	5	1,058														
Ouray	2,864.14	59,267	663	13,706	840,044	688,536	166,138	2,625														
Park	7,809.56	161,442	6,587	136,165	18,701	15,335	10,707	44,197														
Pitkin					429,781	352,256	63,700	5,553														
Rio Grande	80.46	1,662	172	3,656	132	113	73	218														
Saguache	201.58	4,229	11	227	155,723	127,693	9,234	32														
San Juan	11,706.07	241,956	17,506	361,881	471,750	386,835	662,680	459,477														
San Miguel	66,465.70	1,373,968	79,365	1,640,620	1,606,344	1,317,202	1,072,850	443,333														
Summit	11,118.53	236,342	14,065	290,749	142,548	116,859	94,319	717,737														
Teller	195,774.01	4,047,008	236,450	4,887,855	22,606	18,537	27,243	63,099														
Total	318,870.06	\$6,591,629	410,875	\$8,493,540	5,334,488	\$4,374,280	3,248,383	\$2,173,168	4,243,109	\$ 624,472	2,843,737	\$ 370,336	45,693,185	\$3,198,873	46,021,968	\$3,681,767	54,152,000	\$3,632,336	59,205,000	\$3,729,916		
Decreases, 1924																						
Unit prices		\$20.67		\$20.67		\$0.82		\$0.669		\$0.174		\$0.13		\$0.07		\$0.08		\$0.063		\$0.063		
* Includes placer production.																						

PRODUCTION

Gold, Silver, Copper, Lead and Zinc.

The production of gold, silver, copper, lead and zinc for 1923 and 1924 is shown in Table 1. The figures for 1923 are final; those for 1924 are preliminary and subject to correction.

The gold dredges in Summit and Park Counties, the production of which is included in that of the lode mines in Table 1, recovered bullion containing about 16,112 ounces of gold and 2,373 ounces of silver.

Miscellaneous.

Plastic clay, fire clay, gypsum, lime, sandstone, fluorspar and other non-metallic minerals have been produced to meet local demands. The marble quarries have been very active.

Tungsten mining has been carried on by the Wolf Tongue Mining Company and the Tungsten Production Company, Inc., near Nederland, and production was continued from the manganese properties in the Leadville district. A chemical ore reduction plant has been built by the United States Vanadium Company for the manufacture of an intermediate vanadium product. The Climax Molybdenum Company has resumed operations on their molybdenum properties in Lake County.

Acknowledgment.

Thanks are due to George Otis Smith, Director, and C. W. Henderson, Mineral Geographer of the United States Geological Survey, for the production statistics regarding the common metals.

FATAL ACCIDENTS, 1924

Underground.

January 12, Verl Heston, age 19, trammer in a mine in Chaffee County, while engaged in opening a clogged overhead chute, was killed by being caught in a sudden rush of several tons of released ore which carried him down into a lower chute, covering him with about 20 feet of muck. When his lifeless body was recovered about 40 minutes later it was found that no bones were broken and death was evidently caused by suffocation.

February 27, Ray X. Myers, age 47, was fatally injured in a mine in Summit County, when the fly wheel of a belt-driven electric hoisting engine flew to pieces shortly after the same had been installed underground and a piece of the broken fly wheel hit him between the eyes, fracturing his skull, from the effects of which he died a few days later at St. Joseph's Hospital, Denver. An examination of the broken wheel revealed defects from poor casting, which were not noticeable until after the parts were examined following the accident.

April 8, William Pinozza, age 29, was instantly killed in a mine in Lake County by a cave of rock from the footwall of a vein while he was engaged in shoveling ore into a chute after blasting a round of holes.

May 22, Mike Lekich, age 38, trackman, East Portal of Moffat Tunnel, was accidentally struck by some cars, which were being switched on a passing branch, causing a fracture of the skull, from the effects of which he died in 20 minutes. Being purely accidental, no inquest was held.

July 30, Emery Francis Thayer, age 23, while at work on the State Highway as a mucker in the Busk-Ivanhoe Tunnel west of Leadville, was killed by a cave of rock, which broke through the heavy timbers and covered him so deeply that it took about three hours to reach his body. Death evidently was caused by suffocation.

August 25, George Courtad, a prospector, age about 60, was found dead at the portal of his small prospect tunnel, near Gardner. When found the body was partially covered with dirt and rock which had fallen from the roof of the tunnel. One rock weighing about 50 tons evidently struck him on the head, fracturing his skull.

October 20, Joe Lamisch, age 46, was instantly killed in a mine in Teller County by a fall of rock which crushed him against the wall of the stope in which he was working.

November 1, O. L. Odean, age 30, a leaser, was fatally injured by a rock slide in a stope in a mine in Teller County. He

was attempting to dislodge a loose rock, using an iron bar, when the rock suddenly slipped and crushed him against a stull. He died from the effects of his injuries while being hoisted on the cage to the surface.

November 12, Fred Soderman, age 25, a miner, while at work for some lessees in a mine in San Miguel County, was instantly killed by a heavy cave of rock from the roof of the stope in which he was operating a machine drill.

Surface.

September 6, John R. Pestana, Jr., age 19, engaged as a top laborer in a mine in Teller County, while painting the roof of a transformer, came in contact with a high voltage line, causing a heavy electric current to pass through his body to the roof of the building. He died within four hours after the shock.

Mill.

December 10, Herman L. Best, age 33, an oiler, was crushed to death by the heavy descending weights of an elevator. There were no witnesses, but the circumstances indicate that he reached through an opening between the counter weight guides to bring the elevator up, and as the elevator rose, the descending weights caught and crushed him against the timber over which he was leaning.

Quarry.

January 9, S. F. Holland, age 30, was fatally injured in a cement plant in Fremont County. The scaffold attached to a movable form on which he was working broke and caused him to fall some 45 feet to the concrete floor. He was taken to a hospital, but died about 23 hours after the accident. He and his partners were cautioned by the foreman to carefully inspect the scaffold before the accident occurred.

January 15, Frank H. Lanners, age 47, a quarryman, while operating a hoisting plant at a quarry in Rio Grande County, was fatally injured when his clothing was caught in the revolving shafting of the hoister, which was running about 300 revolutions per minute. He died shortly after being taken to the hospital.

June 30, Edward T. Gibbons, age 24, was instantly killed in the tunnel of a rock quarry, near Golden. The quarry is opened by a tunnel driven 205 feet into the mountain, from which a raise 200 feet has been driven to the surface and used as a chute through which the quarried rock was passed and loaded on to the cars in the tunnel. This upraise or chute became blocked and Mr. Gibbons and two other workmen were trying to release it by blasting, when the whole mass suddenly gave way, carrying him down with it to instant death. At the Coroner's inquest a verdict of accidental death was rendered.

July 24, Maurice Seigel Rutledge, age 27, inspector, was fatally injured at a crushing plant at Canon City. While trying to climb around the end of a revolving screen shaft his clothes caught in the shaft and he was whirled around with each revolution until the machinery was stopped. He was removed to a hospital, where he died from the effects of his injuries.

September 26, J. D. Brooker, age 58, teamster, was instantly killed while helping to load a wagon with clay in a clay pit near Calhan. A large rock fell from the rim of the pit and struck him on the back, breaking his neck.

December 31, L. L. Swayzee, age 59, carloader at a stone quarry in Pueblo County, was killed when he was caught between a large derrick bucket containing three tons of rock and the top of a gondola car as he was swinging the boom to a position to dump the bucket in the car.

TABLE II

DAYS OF EMPLOYMENT IN AND ABOUT MINES, MILLS AND SMELTERS, INCLUDING RAILROAD TUNNELS, AND NUMBER OF MEN KILLED AND INJURED PER 10,000 DAYS OF EMPLOYMENT DURING THE YEARS 1923 AND 1924.

	Employment Days of		Killed		Serious Injury (Time Lost Over 14 Days)				Slight Injury (Time Lost Under 14 Days)			
	1923	1924	1923	1924	No. of Accidents	Rate Per 10,000 Days	No. of Accidents	Rate Per 10,000 Days	No. of Accidents	Rate Per 10,000 Days	No. of Accidents	Rate Per 10,000 Days
Underground	778,835	842,142	16	.2054	9	.1068	220	2.824	256	3.039	284	3.646
Surface	263,808	293,023	..	....	1	.0341	41	1.554	55	1.876	55	2.084
Mills	391,390	331,882	1	.0255	1	.0301	39	.9964	17	.5122	31	.7920
Smelters	432,859	433,522	2	.0462	..	....	50	1.155	4	.9457	168	2.495
Quarries	160,650	241,952	1	.0622	6	.2479	37	2.303	16	.6612	45	2.801
Placer Mines (Dredges)	20,782	26,042	1	.4811	..	....	8	3.849	4	1.535	14	6.736
Oil Shale	10,000	10,000	..	....	..	....	..	....	..	....	..	....

TABLE III

CLASSIFICATION ACCORDING TO CAUSE OF ALL ACCIDENTS IN THE METAL MINING AND QUARRYING INDUSTRY IN THE STATE OF COLORADO DURING THE YEARS 1923 AND 1924

	Serious Injuries (Time lost over 14 days)						Slight Injuries (Time lost under 14 days)		
	Permanent Total Disability				Temporary Disability		(1923 1924)		
	1923	1924	1923	1924	1923	1924	1923	1924	
UNDERGROUND									
1. Falls of rock or ore from roof or walls.....	9	6	..	..	2	43	45	47	38
2. Handling of rock or ore—									
(a) Loading at face.....	..	..	..	..	..	7	8	9	5
(b) Loading at chute.....	..	..	..	..	1	15	16	16	15
(c) Sledging.....	..	..	..	..	1	4	1	2	1
3. Timber or hand tools.....	..	..	..	..	1	14	18	27	24
4. Explosives—									
(a) Transportation.....	..	..	..	..	..	..	..	..	..
(b) Charging.....	..	..	..	..	..	..	..	..	..
(c) Suffocation.....	..	..	..	..	..	1	2	..	..
(d) Drilling into old holes.....	..	..	..	..	..	..	..	..	..
(e) Striking in loose rock.....	..	..	..	..	..	..	..	..	..
(f) Thawing.....	..	..	..	..	..	..	..	..	..
(g) Caps, detonators, etc.....	..	..	..	..	..	2	2	1	..
(h) Unguarded shots.....	..	..	..	..	..	..	..	..	..
(i) Returned too soon.....	2	..	..	..	..	..	..	..	..
(j) Premature shot.....	..	..	..	..	..	1	1	1	1
(k) Miscellaneous.....	..	..	..	..	..	..	1	3	1
5. Haulage—									
(a) Hand and animal.....	..	..	..	..	1	10	19	19	17
(b) Mechanical.....	..	1	..	..	..	4	3	5	..
6. Persons falling down chute, winze, raise or slope.....	2	1	..	..	2	16	25	19	13
7. Run of ore from chute or pocket.....	1	..	..	..	..	2	..	..	..
8. Drilling (by machine or hand drills).....	..	..	..	..	2	16	16	26	14
9. Electricity—									
(a) Direct contact with trolley wire.....	..	..	..	..	..	..	..	..	..
(b) Tool or bar striking trolley wire.....	..	..	..	..	..	..	..	..	..
(c) Contact with motor.....	..	..	..	..	..	1	3	1	1
(d) Other causes.....	..	..	..	..	1	10	6	10	2
10. Machinery other than 5 and 8.....	1	..	..	..	1	..	..	..	..
11. Mine fires.....	..	..	..	..	..	..	..	..	..
12. Suffocation from natural gases.....	..	..	..	..	..	..	..	1	..
13. Inrush of water.....	..	..	..	..	..	..	..	..	..
14. Nails and splinters.....	..	..	..	..	..	2	7	3	7

15.	Other causes—	..	..	..	..	1	4	29	28	39	24
	(a) Falling objects other than 1 and 2.....	..	..	..	..	1	4	6	6	20	24
	(b) Flying objects other than 2c.....	..	..	..	..	..	..	1	3	2	2
	(c) Burns.....	..	..	..	..	..	..	16	17	20	19
	(d) Miscellaneous.....	..	..	..	..	..	..	..	..	..	..
	Total.....	14	9	..	..	7	20	199	226	270	208
	SHAFT										
16.	Falling down shaft.....	2	..	..	..	..	..	2	1	..	..
17.	Objects falling down shaft.....	..	..	..	..	..	..	2	..	..	..
18.	Breaking of cables.....	..	..	..	..	..	..	1	..	1	..
19.	Overwinding.....	..	..	..	..	..	..	..	..	..	..
20.	Cage, skip or bucket—										
	(a) Runaway.....	..	..	..	..	..	..	3	..	..	..
	(b) Riding with rock or ore.....	..	..	..	..	..	..	..	..	..	..
	(c) Riding with timber or tools.....	..	..	..	..	..	..	1	1	1	1
	(d) Struck by.....	..	..	..	..	..	3	4	4	4	7
21.	Other causes.....	..	..	..	..	..	..	..	..	..	..
	Total.....	2	..	..	..	1	3	13	7	14	11
	SURFACE SHOPS AND PLANTS										
22.	Haulage—										
	(a) Hand and animal.....	..	..	..	..	1	..	3	5	3	2
	(b) Mechanical.....	..	..	..	..	..	..	2	1	..	..
23.	Railway cars and locomotives.....	..	..	..	..	..	..	1	..	..	..
24.	Run or fall of ore in or from bins.....	..	..	..	..	..	..	..	..	..	..
25.	Falls of persons.....	..	..	..	..	3	..	8	25	12	7
26.	Nails and splinters.....	..	..	..	..	..	..	1	..	3	1
27.	Hand tools, axes, bars, etc.....	..	..	..	..	..	..	4	4	6	5
28.	Electricity—										
	(a) Direct contact with trolley wire.....	..	..	..	..	..	..	..	..	..	..
	(b) Tool or bar striking trolley wire.....	..	..	..	..	..	..	..	..	..	..
	(c) Contact with motor.....	..	1	..	..	..	..	1	..	..	..
	(d) Other causes.....	..	..	..	..	..	1	4	4	3	1
29.	Machinery.....	..	..	..	..	..	..	..	..	..	..
30.	Other causes—										
	(a) Falling objects.....	..	..	..	..	1	..	9	7	8	8
	(b) Flying objects.....	..	..	..	..	..	..	2	..	8	..
	(c) Burns.....	..	..	..	..	..	..	1	2	..	..
	(d) Miscellaneous.....	..	..	..	..	..	..	3	3	7	9
	Total.....	..	1	..	..	2	4	19	31	55	36

CLASSIFICATION ACCORDING TO CAUSE OF ALL ACCIDENTS IN THE METAL MINING AND QUARRYING INDUSTRY IN THE STATE OF COLORADO DURING THE YEARS 1923 AND 1924—(Continued)

	Serious Injuries						Slight Injuries	
	(Time lost over 14 days)				(Time lost under 14 days)			
	Total		Partial		Temporary Disability			
	1923	1924	1923	1924	1923	1924	1923	1924
PLACER MINES—DREDGING								
1. Machinery	4	..
2. Electricity	1	..	..	..	1	..	..	..
3. Boiler explosions or bursting of steam pipes	2
4. Falls of persons	3	2	1	..
5. Hand tools	3	3
6. Other causes	1	1	3	1	7	3
Total	1	..	1	1	7	3	14	7
ORE DRESSING AND MILLING								
1. Haulage system—	1	..	3	1
(a) Cars and motors
(b) Mechanical conveyors
2. Railway cars and locomotives
3. Crushers, rolls or stamps
4. Tables, jigs, etc.
5. Other machinery	6	3	2	2
6. Falls of persons	1	..	1	..	7	3	7	2
7. Suffocation in ore bins
8. Falling objects (rocks, timber, etc.)	5	1	5	..
9. Cyanide or other poisoning
10. Scalding (steam or water)
11. Electricity	1	1	3	..	1	1
12. Hand tools, axes, bars, etc.	6	5	5	1
13. Nails, splinters, etc.	2	..	2	..
14. Flying pieces of rock from sledging or crushing	1	..	1	..
15. Other causes	1	..	..	..	7	4	5	2
Total	1	1	1	1	38	16	31	9
SMELTER								
16. Haulage system—	3	..	6	2
(a) Cars and motors
(b) Mechanical conveyors
(c) Hand and animal

17.	Railway cars and locomotives.....	..	..	..	1
18.	Cranes .....	..	..	..	1
19.	Other machinery .....	..	..	..	1
20.	Falls of persons.....	..	1	..	3
21.	Suffocation in ore bins.....	..	..	..	5
22.	Flying or falling objects (rocks, timbers, etc.) .....	..	..	..	7
23.	Gas (burns or asphyxiation)	2	..	..	4
24.	Scalding (steam or water) .....	..	..	..	2
25.	Electricity .....	..	..	..	..
26.	Hand tools, axes, bars, etc.....	..	..	..	..
27.	Nails, splinters, etc.....	..	..	..	5
28.	Burns from matte, slag, or molten metal (pouring or spilling) .....	..	..	..	1
29.	Hot metal explosions .....	..	..	..	6
30.	Other causes .....	..	..	..	9
Total	.....	2	1	..	39
AUXILIARY WORKS					
31.	Haulage systems .....	..	..	..	2
32.	Railway cars and locomotives.....	..	..	..	1
33.	Falls of persons.....	..	..	..	6
34.	Falling objects (rocks, timbers, etc.) .....	..	..	..	3
35.	Nails, splinters, etc. ....	..	..	..	2
36.	Hand tools, axes, bars, etc.....	..	..	..	1
37.	Electricity .....	..	..	..	3
38.	Machinery .....	..	..	..	..
39.	Failure of ladder, scaffold, or other support.....	..	..	..	2
40.	Handling hot materials.....	..	..	..	1
41.	Other causes .....	..	..	..	2
Total	.....	..	..	..	10
IN AND ABOUT QUARRY					
1.	Falls or slides of rock or overburden.....	1	2	..	5
2.	Handling rock at face.....	..	..	..	4
3.	Timber or hand tools.....	..	..	1	2
4.	Explosives— (a) Transportation .....	..	..	..	..
	(b) Charging .....	..	..	..	..
	(c) Drilling into old holes.....	..	..	1	1
	(d) Striking in loose rock.....	..	..	..	..
	(e) Thawing .....	..	..	..	..
	(f) Caps, detonators, etc.....	..	..	..	..
	(g) Unguarded shots .....	..	..	..	..
	(h) Returned too soon.....	..	..	..	..
	(i) Premature shot .....	..	..	1	1
	(j) Delayed blast .....	..	..	..	..
	(k) Miscellaneous
Total	1	2	..	13

IN AND ABOUT QUARRY

1.	Falls or slides of rock or overburden.....																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											</
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CLASSIFICATION ACCORDING TO CAUSE OF ALL ACCIDENTS IN THE METAL MINING AND QUARRYING INDUSTRY IN THE STATE OF COLORADO DURING THE YEARS 1923 AND 1924—Concluded

	Fatal 1923 1924	Permanent Total Disability 1923 1924		(Time lost over 14 days) Permanent Disability 1923 1924		Temporary Disability 1923 1924		Slight Injuries (Time lost under 14 days) 1923 1924	
		1923	1924	1923	1924	1923	1924	1923	1924
5. Haulage—									
(a) Hand and animal .....	..	..	..	..	..	1	..	1	4
(b) Mechanical .....	..	..	..	..	..	1	..	1	2
6. Falling into quarry from surface, benches or face .....	..	..	..	..	..	..	..	..	..
7. Falling from hoist, derricks, ladders, etc. ....	..	..	..	..	..	..	..	..	..
8. Drilling and channeling (by machine or hand) .....	..	..	..	1	..	..	..	..	..
9. Electricity (shock or burns) .....	..	..	..	..	..	..	..	1	1
10. Machinery—									
(a) Cables and attachments .....	..	..	..	..	..	..	1	..	1
(b) Guys, masts, booms and attachments .....	..	..	..	..	..	..	..	..	..
(c) Pumps and hoisting engines .....	..	..	..	..	..	..	..	..	..
11. Flying pieces of rock from sledging	1	..	..	..	..	..	1	3	2
12. Nails, splinters, etc. ....	..	..	..	..	..	..	..	..	..
13. Boiler and air tank explosions .....	..	..	..	..	..	..	..	..	..
14. Animals .....	..	..	..	..	..	..	..	..	..
15. Other causes	1	..	..	..	..	7	1	10	2
Total	1	4	..	1	..	24	10	26	34
OUTSIDE WORKS									
16. Haulage—									
(a) Hand and animal .....	..	..	..	..	..	1	..	..	..
(b) Mechanical .....	..	..	..	..	..	..	..	1	..
17. Railway cars and locomotives .....	..	..	..	..	..	..	..	..	..
18. Crushers .....	..	..	..	..	..	..	..	..	..
19. Cranes, derricks, etc.	1	..	..	..	..	..	..	..	..
20. Other machinery .....	..	..	..	1	..	1	2	1	..
21. Falls of persons	1	..	..	..	..	3	1	2	2
22. Hand tools .....	..	..	..	..	..	..	..	1	1
23. Electricity .....	..	..	..	..	..	1	..	..	1
24. Nails, splinters, etc. ....	..	..	..	..	..	..	..	..	..
25. Flying pieces of rock from sledging or crushing .....	..	..	..	..	..	..	..	..	..
26. Flying or falling objects (rocks, timbers, etc.) .....	..	..	..	..	..	2	3	6	11
27. Burns .....	..	..	..	..	..	..	..	3	2
28. Other causes .....	..	..	..	..	..	3	..	5	1
Total	2	..	..	1	..	11	6	19	18

TABLE IV

CLASSIFICATION ACCORDING TO CAUSE AND OCCUPATION OF THE FATAL ACCIDENTS THAT OCCURRED IN THE METAL MINING AND QUARRYING INDUSTRY OF COLORADO IN THE YEARS 1923 AND 1924

MINES																
	Superintend- ents, Fore- men and Engineers		Machine Men and Helpers		Miners		Loaders, Shovelers Muckers and Trammers		Trackmen, Pipemen, Pumpmen and Com- pressormen		Cage Tenders and Station Cagers		Carpenters, Timber- men and Helpers		Elec- tricians, Motor- men and Helpers	
	1923	1924	1923	1924	1923	1924	1923	1924	1923	1924	1923	1924	1923	1924	1923	1924
UNDERGROUND																
1.	Falls of rock or ore from roof or wall .....	..	..	1	3	4	2	..	..	..	..	..	3	1	..	..
2.	Handling rock or ore .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3.	Timber or hand tools .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4.	Explosives .....	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..
5.	Haulage .....	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
6.	Persons falling down chute, winze, raise or stope .....	..	1	..	1	1	1	..	..	..	..	..	..	..	..	..
7.	Run of ore from chute or pocket .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8.	Drilling (by machine or hand drills) .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9.	Electricity .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10.	Machinery other than 5 or 8	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11.	Mine fires .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12.	Suffocation from natural gases .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13.	Inrush of water .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14.	Nails and splinters .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15.	Other causes .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	1.	4	2	4	5	2	1	..	..	..	..	3	1	..	..
SHAFTS																
16.	Falling down shaft	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..
17.	Objects falling down shaft .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18.	Breaking of cables .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19.	Overwinding .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20.	Cage, skip or bucket .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21.	Other causes .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..

CLASSIFICATION ACCORDING TO CAUSE AND OCCUPATION OF THE FATAL ACCIDENTS THAT
OCCURRED IN THE METAL MINING AND QUARRYING INDUSTRY OF COLORADO IN THE
YEARS 1923 AND 1924—Continued

SURFACE ACCIDENTS

	Superintendent- Foremen	Engineers and Hoistmen	Blacksmiths and Mechanics	Carpen- ters and Toppers	Elec- tricians	Others
	1923	1924	1923	1924	1923	1924
22. Haulage
23. Railway cars and locomotives.....
24. Run or fall of ore in or from ore bins.....
25. Fall of persons.....
26. Nails and splinters.....
27. Hand tools, axes, bars, etc.....
28. Electricity	1
29. Machinery
30. Other causes
Total	—	—	—	—	—	1

MILLS

	Superintendent- Foremen	Grinding Machinery Men and Millmen	Concen- trator Men	Laborers	Carpenters and Mechanics	Aerial Tram Men and Conveyor Men
	1923	1924	1923	1924	1923	1924
1. Haulage system
2. Railway cars and locomotives.....
3. Crushers, rollers or stamps.....
4. Tables, jigs, etc.....
5. Other machinery.....
6. Falls of persons.....	1	..	..
7. Suffocation in ore bins
8. Falling objects (rocks, timbers, etc.)
9. Cyanide or other poisoning.....
10. Scalding (steam or water).....
11. Electricity
12. Hand tools, axes, bars, etc.....
13. Nails, splinters, etc.....
14. Flying pieces of rock from sledging or crushing.....	1	..	..
15. Other causes.....
Total	—	—	—	1	—	..

SMELTERS

	Superintend- ents and Foremen 1923 1924	Laborees 1923 1924	Motormen and Switchmen 1923 1924	Furnace and Charge Wheelers 1923 1924	Feeders and Men 1923 1924
1. Haulage system
2. Railway cars and locomotives
3. Cranes
4. Other machinery
5. Falls of persons
6. Suffocation in ore bins
7. Flying or falling objects
8. Gas (burns or asphyxiation)	1	1	..	..	..
9. Scalding (steam or water)
10. Electricity
11. Hand tools, axes, bars, etc.
12. Nails, splinters, etc.
13. Burns from matte, slag or molten metal (pouring or spilling)
14. Hot metal explosions
15. Other causes
Total	1	1	..	..	..

QUARRIES, CLAY PITTS AND OIL SHALE MINES

	Superintend- ents and Foremen 1923 1924	Teamsters 1923 1924	Drillmen 1923 1924	Laborees 1923 1924
1. Haulage .....	..	..	..	..
2. Machinery	2	..	..	..
3. Other causes	1	2	..	1
Total	3	2	..	1

	Miners 1923 1924	Dredgemen 1923 1924	Laborees 1923 1924
1. Machinery
2. Electricity	1
3. Other causes
Total	1

PLACERS AND DREDGES

OPERATING MINES IN BOULDER COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Acme.....	Boulder.....	Acme Gold Mining	1823 19th St., Boulder.....	Gold, Silver (c)
Bemhelsel Shaft (a).....	Nederland.....	W. J. Melins.....	Nederland.....	Tungsten (c)
Black Diamond.....	Nederland.....	C. L. Stewart.....	Erie.....	Tungsten
Blue Jay, Argo (a).....	Jamesstown.....	Climax Spar and Radium Co.....	Colorado Building, Denver.....	Fluorspar, Gold, Silver, Lead
Boulder County Tunnel (a).....	Cardinal.....	Fairview Mining Corp.....	820 Foster Bldg., Denver.....	Gold, Silver (c)
Caribou.....	Caribou.....	Caribou Metals Company.....	Nat'l State Bldg., Boulder.....	Gold, Silver, Lead
Cold Spring, etc. (m).....	Nederland.....	Wolf Tongue Mining Co.....	Box 25, Boulder.....	Tungsten
East Side (a).....	Eldora.....	Sullivan Brothers.....	Eldora.....	Gold, Silver (c)
Fairview.....	Nederland.....	Fairview Mining Corp.....	820 Foster Bldg., Denver.....	Gold, Sil., Lead (c)
Golden Triangle.....	Jamesstown.....	Golden Triangle Mfg. Co.....	Jamesstown.....	Fluorspar
Harlow (Chancellor) (a).....	Jamesstown.....	F. C. Dorr and J. O. Evans.....	Jamesstown.....	Fluorspar
Huron (a).....	Eldora.....	Huron Gold Ores Company.....	Box 1446, Denver.....	Gold, Silver (c)
Illinois.....	Jamesstown.....	Frank Tower.....	Jamesstown.....	Fluorspar
Iron Age.....	Magnolia.....	Omaha Mining Corp. of Colo.....	Magnolia.....	Tungsten
Jake Witter (a).....	Crisman.....	E. R. Godsey.....	Magnolia.....	Tungsten
KeKeOnga.....	Magnolia.....	Omaha Mining Corp. of Colo.....	2923 Inca St., Denver.....	Gold, Silver (c)
Little Jule.....	Crisman.....	Little Jule Mining Company.....	Magnolia.....	Tungsten
Logan.....	Crisman.....	Logan Metals Company.....	2087 So. High St., Denver.....	Gold, Silver (c)
Madaline.....	Nederland.....	H. B. Shockey.....	Box 333, Boulder.....	Gold, Silver
Mary Olive (a).....	Crisman.....	H. E. Baker.....	Nederland.....	Tungsten
Maud S.....	Jamesstown.....	R. S. Stephenson & Co.....	3519 Newton St., Denver.....	Gold, Silver (c)
Nations Treasure (a).....	Jamesstown.....	E. R. Terry.....	Jamesstown.....	Gold, Silver, Lead
Ophir.....	Magnolia.....	White Brothers.....	2507 Pearl St., Boulder.....	Fluorspar
Philadelphia.....	Nederland.....	Beckwith & Company.....	1540 Fillmore St., Denver.....	Gold, Silver
Potosi.....	Caribou.....	Potosi-Caribou Mining Co.....	160 Broadway, New York.....	Tungsten
Roseberry (a).....	Eldora.....	Roseberry M. & M. Co.....	3411 Lafayette St., Denver.....	Gold, Silver, Lead, Copper, Zinc
Shirley (a).....	Eldora.....	J. B. Rowley.....	Eldora.....	(c)
Violet Ray.....	Jamesstown.....	H. S. Vickery & Sons.....	Jamesstown.....	Fluorspar
Violet Ray.....	Jamesstown.....	Wert Wood & Co.....	Jamesstown.....	Fluorspar
W. T. etc. (m).....	Boulder.....	Tungsten Production Co., Inc.....	Nat'l State Bldg., Boulder.....	Fluorspar
Wood Mountain (m).....	Wallstreet.....	Wood Mountain Mines Co.....	Wallstreet.....	Tungsten
Yellow Pine.....	Crisman.....	Yellow Pine Mines and Reduction Co.....	Boulder.....	Gold, Silver, Lead, Copper

OPERATING MINES IN CLEAR CREEK COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Alabama (a).....	Dumont.....	Lee Mining and Milling Company.....	509 Corn'wealth Bldg., Denver.....	Gold, Silver (c)
Albro Extension (a).....	Dumont.....	Albro Extension M. and M. Co.....	504 Jacobson Bldg., Denver.....	Gold, Silver, Copper (c)

Alexander (a).....	Idaho Springs.....	George Miner and Associates.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead (c)
Argo.....	Idaho Springs.....	Stude-Marie Mining Co.....	Mining Exchange Bldg.,	Denver, Lead,	Gold, Sil., Lead (c)
Argo Tunnel (a).....	Idaho Springs.....	Washington Cons. Mines Co.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead
Atlas (a).....	Georgetown.....	Boston and Clear Creek Mining Co.....	Boston, Mass.....	Idaho Springs.....	Gold, Sil., Lead
Bellevue Hudson (a).....	Empire.....	Bellevue Hudson Milling Co.....	317-320 First Nat. Bank	Idaho Springs.....	Gold, Sil., Lead
Bertha (a).....	Idaho Springs.....	Conrad Bergen.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead
Black Bear (a).....	Idaho Springs.....	Black Bear Mines.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead
Blind (a).....	Idaho Springs.....	Oscar Johnson.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead (c)
Brazil (a).....	Idaho Springs.....	Brazil Mining Company.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead (c)
Bread Winner (a).....	Idaho Springs.....	W. S. Humphrey and Associates.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead
Capital Prize Tunnel (a).....	Georgetown.....	Capital M. and M. Co.....	Boston, Mass.....	Idaho Springs.....	Gold, Sil., Lead
Challenge (a).....	Empire.....	Challenge Mine.....	Empire.....	Idaho Springs.....	Gold, Sil., Lead
Clear Creek and Gilpin Tunnel.....	Dumont.....	Corporation of America Mines Co.....	50 Broad St., New York.....	Idaho Springs.....	Gold, Sil., Lead
Cleveland-Silverwing (a).....	Lawson.....	C. F. Lawson.....	Lawson.....	Idaho Springs.....	Gold, Sil., Lead (c)
Climax.....	Lawson.....	DeCaprioli Mining Co.....	105 W. Monroe St., Chicago, Ill.....	Idaho Springs.....	Gold, Sil., Lead
Coddling Mill (a) (m).....	Idaho Springs.....	Coddling Process.....	1763 Blake St., Denver.....	Idaho Springs.....	Gold, Sil., Lead
Cooper Tunnel (a).....	Idaho Springs.....	William Cooper.....	Box 493, Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead
Croesus (a).....	Silver Plume.....	David Collins & Co.....	Silver Plume.....	Idaho Springs.....	Gold, Sil., Lead (c)
Crown Point.....	Idaho Springs.....	Caney Oil-Mines Co.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead
Cyclone (a).....	Silver Plume.....	Joseph Cottingham.....	Silver Plume.....	Idaho Springs.....	Gold, Sil., Lead
Davenport.....	Georgetown.....	J. J. White.....	Georgetown.....	Idaho Springs.....	Gold, Sil., Lead
Denver Tunnel and	Georgetown.....	Metals Tunnel Company.....	2555 W. 37th Ave., Denver.....	Idaho Springs.....	Gold, Sil., Lead (c)
Honest John Tunnel.....	Georgetown.....	East Butte Copper Mining Co.....	1016 First N. B. Bldg., Denver.....	Idaho Springs.....	Gold, Sil., Lead
Dives Seven Thirty.....	Silver Plume.....	Southern M. and M. Corp.....	Silver Plume.....	Idaho Springs.....	Gold, Sil., Lead
Duncan (a).....	Silver Plume.....	Dunkirk Mining Company.....	Box 1977, Denver.....	Idaho Springs.....	Gold, Sil., Lead
Dunkirk.....	Silver Plume.....	Empire Cons. Mines Inc.....	Empire.....	Idaho Springs.....	Gold, Sil., Lead
Empire Tunnel (a).....	Idaho Springs.....	Oscar Johnson & Company.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead
Esmeralda (a).....	Idaho Springs.....	Extension Lode.....	3 Logan St., Denver.....	Idaho Springs.....	Gold, Sil., Lead
Extension No. 2 (a).....	Idaho Springs.....	Food Cliff Mining Co.....	2004 Live Oak St., Dallas, Tex.....	Idaho Springs.....	Gold, Sil., Lead
Food Cliff.....	Idaho Springs.....	Idaho Mfg. Rod. T. and T. Company.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead
Freighters Friend.....	Idaho Springs.....	Idaho Springs.....	Idaho Springs.....	Idaho Springs.....	Gold, Sil., Lead

(a) Operated for part of the year only. (c) No production in 1924. (m) Mill operated in connection with mine.

OPERATING MINES IN CLEAR CREEK COUNTY, 1924—Continued.

Name of Mine	Location	Operator	P. O. Address	Character of Product
Gernan (a)	Idaho Springs	Christian Stangler	Idaho Springs	Gold, Sil., Lead (c)
Geyser (a)	Georgetown	E. J. Digeness and Associates	Georgetown	Gold, Silver, Lead, Copper, Zinc (c)
Glasgow (a)	Silver Plume	John M. McClousky	1220 Lipan St., Denver	Gold, Silver, Lead, Zinc
Glennalla	Idaho Springs	P. V. Downey & Co.	214 Patterson Bldg., Denver	Gold, Sil., Copper
Gold Belt Tunnel	Silver Plume	Elmwood M. and E. Co.	Silver Plume	Gold, Silver, Lead, Zinc
Gold Valley Tunnel	Lawson	Columbian M. and Sub-Leasing Co.	1557 E. 28th Ave., Denver	Gold, Silver, Lead
Golden Glen (a)	Idaho Springs	August Dieks	Idaho Springs	Gold, Silver, Lead, Copper, Zinc (c)
Grand and Clear Creek (a)	Empire	G. H. Anderson & Co.	Empire	Sil., Lead, Zinc (c)
Hamill Tunnel	Silver Plume	Hamill Mining Tunnel Co.	Silver Plume	Silver
Humboldt (a)	Idaho Springs	Humboldt Mining Company	Ault	Gold, Silver, Lead
Iron King (a)	Empire	Ed. Carlson	Andrews	Gold, Silver, Copper (c)
Jackson Mill	Idaho Springs	Dunkirk Mining Company	Box 1977, Denver	Gold, Silver, Lead
Jo Reynolds	Idaho Springs	Silver Cycle Mining Co.	Cooper Bldg., Denver	Gold, Silver, Lead
Kangaroo	Idaho Springs	Idaho Tunnel Corporation	Idaho Springs	Gold, Silver, Copper
Kelly Tunnel (a)	Georgetown	Beecher Moline Mines Corp.	316 Clinton Bldg., Newark, N. J.	Gold, Silver, Copper (c)
Kennedy Group (a)	Idaho Springs	J. J. Kennedy	Idaho Springs	Gold, Silver, Copper (c)
Legal Tender (a)	Dumont	Silver Cycle Mining Co.	Cooper Bldg., Denver	Lead
Lily (a)	Idaho Springs	G. L. Brown	Idaho Springs	Gold, Sil., Lead (c)
Lincoln	Idaho Springs	Lincold M. and M. Co.	Dayton, Ohio	Gold, Sil., Copper
Little Ute	Idaho Springs	Charles Barron	Idaho Springs	Gold, Silver, Lead
Lombard (m)	Idaho Springs	Cumberland Mining Co.	40 Wall St., New York	Gold, Silver, Lead, Copper, Zinc
Lucania Tunnel (a)	Idaho Springs	Penn. Mg. Power and Red. Co.	Idaho Springs	Gold, Silver, Lead, Copper, Zinc (c)
M. and E. Tunnel (a)	Idaho Springs	Jay Kane	Idaho Springs	Gold, Sil., Lead (c)
Madison	Idaho Springs	Madison Mining Co.	Idaho Springs	Gold, Silver (c)
Mammoth, Silver Leaf and Duncan (m)	Silver Plume	S. P. Silver Mg. Co.	Silver Plume	Gold, Silver, Lead
Mattie (a)	Idaho Springs	Mattie Cons. Mines Inc.	704 First Nat. B. Bldg., Denver	Gold, Sil., Lead (c)
May Queen	Idaho Springs	May Queen M. and M. Co.	Idaho Springs	Gold, Silver
Mendota (m)	Silver Plume	Wasatch Colorado Mining Co.	1122 Marshall Field Annex Bldg., Chicago, Ill.	Gold, Silver, Lead, Zinc
Millington	Lawson	P. R. Stanhope	Dumont	Gold, Silver
Molly Bawn (a)	Empire	Kenneth Sharpe	Empire	(c)

Mt. Kelso.....	Silver Plume.....	Kelso National Mfg. Corp.....	Georgetown.....	Gold, Silver, Lead, Zinc
Muscovite (a).....	Idaho Springs.....	Muscovite Leasing Co.....	Box 585, Idaho Springs.....	Gold, Silver, Lead, Zinc (c)
Neglected.....	Freeland.....	Charles Olson.....	Idaho Springs.....	Gold, Silver, Lead, Copper, Zinc
New Era.....	Freeland.....	Sunset Gold M. and M. Co.....	Idaho Springs.....	Gold, Silver, Lead, Copper
Nimrod (a).....	Grant.....	Freund & Hunter.....	Cassels.....	Gold, Silver, Lead, Copper, Zinc (c)
O. S. Storrs.....	Empire.....	Downey & Company.....	214 Patterson Bldg., Denver.....	Gold, Sil., Copper
Oriental.....	Georgetown.....	Oriental Tunnel Site.....	Box 2, Georgetown.....	Gold, Silver, Lead, Copper, Zinc (c)
P. T. (m).....	Idaho Springs.....	Burkhardt & Company.....	1515 Blake St., Denver.....	Gold, Silver (c)
Park Group.....	Idaho Springs.....	M. T. Chestnut, Agent.....	2019 E. 20th Ave., Denver.....	Gold, Silver, Lead, Copper, Zinc
Payne Tunnel, etc. (m).....	Empire.....	Golden Empire Mining Co.....	Empire.....	Gold, Silver, Lead, Copper, Zinc
Pegmatite.....	Empire.....	Oliver Needham.....	Empire.....	Gold, Silver, Lead
Perkins Tunnel.....	Idaho Springs.....	F. L. Patrick & Associates.....	Idaho Springs.....	(c)
Platts, Big Chance Group.....	Lawson.....	C. F. Lawson & Company.....	Lawson.....	Gold, Silver, Lead, Zinc
Poorman.....	Freeland.....	R. W. Mackenzie.....	Idaho Springs.....	Gold, Silver
Princeton.....	Empire.....	Klaner and Brunson.....	Idaho Springs.....	(c)
Queen Elizabeth.....	Idaho Springs.....	Frank J. Hayes Mining Co.....	222 Steel Bldg., Denver.....	Gold, Silver, Lead, Copper
Rifle.....	Empire.....	Columbia Mining Co.....	Empire.....	Gold, Silver
Rio Grande.....	Idaho Springs.....	P. V. Downey & Co.....	214 Patterson Bldg., Denver.....	Gold, Silver
Santiago (a).....	Georgetown.....	J. R. Campbell.....	Georgetown.....	Gold, Silver, Lead, Copper (c)
Senator.....	Lawson.....	Himes and Modesitt.....	5309 Hyde Pk. Blvd., Chicago.....	Gold, Silver, Lead, Copper
Sidney Tunnel (a).....	Georgetown.....	Sidney Tunnel Properties.....	Georgetown.....	(c)
Silver Cycle.....	Idaho Springs.....	Silver Cycle Mining Co.....	Cooper Bldg., Denver.....	(c)
Silver King.....	Dumont.....	Henry Bolthoff.....	Hendrie & Bolthoff, Denver.....	Gold, Silver, Lead, Copper (c)
Silver Queen.....	Idaho Springs.....	Surety Gold Mining Co.....	Idaho Springs.....	Gold, Silver, Lead, Copper (c)
Star of the West (a).....	Silver Plume.....	Clair Brothers & Catren.....	Silver Plume.....	Gold, Sil., Lead (c)
Sunburst (m).....	Georgetown.....	Sceptre Mines and Mills Co.....	35 Congress St., Boston, Mass.....	Gold, Silver, Lead, Zinc
Sun Dog (a).....	Silver Plume.....	Buckley Brothers.....	Silver Plume.....	Gold, Sil., Lead (c)
Sunkist.....	Georgetown.....	Colorado Extension Mfg. Co.....	Boston, Mass.....	(c)
Syndicate Group (a).....	Dumont.....	Dumont Mining and Milling Co.....	Dumont.....	Gold, Silver, (c)
Teagarden Tunnel.....	Georgetown.....	Republican Leasing Co.....	Georgetown.....	Silver, Lead (c)
Tom Moore.....	Lawson.....	Tom Moore M. and M. Co.....	310 Colorado Bldg., Denver.....	Gold, Sil., Lead (c)
Treasure Vault.....	Idaho Springs.....	Washington Cons. Mines Co.....	47 Broadway, New York.....	Gold, Silver, Lead

(a) Operated for part of the year only. (c) No production in 1924. (m) Mill operated in connection with mine.

OPERATING MINES IN CLEAR CREEK COUNTY, 1924—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Tropic (a)	Idaho Springs	Owen & Company	Idaho Springs	Gold, Silver, Lead, Copper, Zinc
Turner Extension	Freeland	C. M. Glasgow & Company	Idaho Springs	(c)
Twin Ports and Empire (a)	Empire	Twin Ports and Empire Mfg. Co.	27 Wisc. Bldg., Superior, Wisc.	Gold, Silver, Lead, Copper
United Freeland (m)	Dumont	United Freeland D. and T. Co.	Idaho Springs	Copper, Zinc (c)
Virginia City	Empire	Virginia City M. and M. Co.	Empire	Gold, Silver, Lead, Copper, Zinc (c)
West Gold	Idaho Springs	Ed. Chamberlain	Silver Plume	Gold, Silver
Wyoming Valley Tunnel (a)	Idaho Springs	Silver Cycle Mining Co.	501 Cooper Bldg., Denver	Gold, Silver, Lead, Copper, Zinc (c)
Yukon Girl	Idaho Springs	James Meldrum	Idaho Springs	Gold, Sil., Lead (c)

OPERATING MINES IN CUSTER COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Bassick Cyanide Mill (m)	Querida	Alaska M. and M. Company	Silver Cliff	(c)
Cloverdale	Hillside	Cloverdale Mines Company	Hillside	(c)
Lambertine (a)	Querida	G. F. Mining Associates	943 Claremont Ave., Pueblo	(c)
Last Quarter	Westcliffe	Henry J. Arnold	1855 So. Barnock St., Denver	Silver, Lead, Zinc
Maverick	Rosita	Maverick M. and M. Company	424 Delbert St., Florence	(c)
Maxine Elliott (a)	Westcliffe	White Iron Mining Corporation	4633 A Delmar St., St. Louis, Mo.	(c)
Mountain Boy	Querida	Bassick Extension Mfg. Corp.	Box 145, Westcliffe	(c)
Passiflora	Westcliffe	Passiflora M. and M. Co.	Florence	Sil., Lead, Copper
Silver Crown	Westcliffe	Sylvanus Hynes	123 Macon St., Canon City	Silver (c)
Skok City	Westcliffe	Bassick Extension Mfg. Corp.	4633 A Delmar St., St. Louis, Mo.	(c)
Sun Rise (a)	Querida	F. W. Lawson & Dan Isley	Box 779, Silver Cliff	Silver, Lead
Terrible (m)	Ilse	R. D. Webb Mining Company	Ilse	Lead
Wahl (a)	Westcliffe	Colorado Fuel and Iron Co.	820 Boston Bldg., Denver	Iron, Manganese

OPERATING MINES IN DOLORES COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Falcon, Yellow Jacket and Nora Lilley	Rico	Falcon Lead Mining Company	711 Bullitt Bldg., Pa.	Silver, Lead, Copper, Zinc
Smuggler-Almont	Coke Ovens	Mt. Pleasant Mining Company	c/o Fillius, Fillius and Winters, Denver	(c)

OPERATING MINES IN EAGLE COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Eagle.....	Gilman.....	Empire Zinc Company.....	160 Front St., New York City.....	Silver, Lead, Copper, Zinc
Lady Belle (a).....	Eagle.....	R. H. Messa.....	Eagle.....	Silver
Polar Star (a).....	Eagle.....	Mrs. Ida M. Butts.....	Eagle.....	Gold, Silver

OPERATING MINES IN GILPIN COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Aetna (a).....	Central City.....	C. W. Light & Company.....	Central City.....	Gold, Silver, Lead, Zinc
Alice.....	Central City.....	Anderson Brothers.....	Central City.....	Gold, Silver, Lead, Copper, Zinc (c)
American Eagle.....	Blackhawk.....	Bradford Mines Company.....	Scranton, Pa.....	Gold, Silver, Lead, Copper
Arizona.....	Russell Gulch.....	Tony Carlin.....	Russell Gulch.....	Gold, Silver, Lead, Copper
Atkinson (a).....	Central City.....	James and Thomas Atkinson.....	Central City.....	Gold, Silver, Lead, Copper, Zinc (c)
Becky Sharp.....	Central City.....	Thelma Mining Company.....	1607 Jasmine St., Denver.....	Gold, Sil., Copper
Belmont (a).....	Russell Gulch.....	Jupiter-St. Clair Mfg. Co.....	Russell Gulch.....	Gold, Silver, Copper (c)
Big Six (a).....	Russell Gulch.....	B. J. Monroe.....	Russell Gulch.....	Gold, Silver, Lead
Black Jack (a).....	Blackhawk.....	Silver Mountain Mfg. Co.....	Blackhawk.....	Gold, Silver, Lead, Zinc (c)
Bonanza Tunnel.....	Central City.....	Ruby-Joe Mining Company.....	403 Mining Exchange Bldg., Denver.....	Gold
Bryan Tunnel.....	Blackhawk.....	O. C. Redick Mining Co.....	250 Omaha Nat. Bank Bldg., Omaha, Nebraska.....	Gold, Silver, Lead, Copper, Zinc
Bullion No. 2 (a).....	Central City.....	Cudahay M. and M. Co.....	Central City.....	Gold, Silver, Lead, Copper
Cape Cod (a).....	Blackhawk.....	Charles Woodbridge.....	1615 Ford St., Golden.....	Gold, Silver, Lead, Copper
Chaffee.....	Blackhawk.....	H. E. Woodward.....	Central City.....	Gold, Silver, Lead, Copper, Zinc
Colorado Tunnel.....	Rollinsville.....	Comstock M. and M. Co.....	Rollinsville.....	Gold, Sil., Copper
Cornucopia.....	Central City.....	Syndicate Leasing Co.....	Blackhawk.....	Gold, Silver, Lead, Copper, Zinc (c)
Delmonico (a).....	Russell Gulch.....	"The Delmonico Mine".....	2448 Irving St., Denver.....	Gold, Sil., Copper
DeLaux (a).....	Hughesville.....	B. T. Hughes & Co.....	Russell Gulch.....	Gold, Silver, Lead, Copper
Evergreen (m).....	Apex.....	Evergreen Mines Company.....	408 Empire Bldg., Denver.....	Gold, Sil., Copper

(a) Operated for part of the year only. (c) No production in 1924. (m) Mill operated in connection with mine.

OPERATING MINES IN GILPIN COUNTY, 1924—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Fairfield.....	Russell Gulch.....	Fairfield Mining Company.....	Russell Gulch.....	Gold, Sil., Copper
Gold Rock and Gold Coin (a).....	Apex.....	Walter G. Fordham.....	Box 7, Capitol Hill Station, Denver.....	Gold, Silver, Copper (c)
Golden Crescent (a).....	Blackhawk.....	Frank L. Brankam.....	Blackhawk.....	(c)
Golden Ledge.....	Idaho Springs.....	Golden Ledge Syndicate.....	Idaho Springs.....	(c)
Greenside.....	Central City.....	Rice E. Hall.....	Central City.....	Gold, Silver, Lead, Copper
Ingram.....	Apex.....	James Ingram.....	Apex.....	Gold, Sil., Copper
Jennie Blanche.....	Blackhawk.....	Richards & Saunders.....	Blackhawk.....	Gold, Silver, Lead
Joe Bush (a).....	Blackhawk.....	A. H. Swarthout.....	Blackhawk.....	Gold, Sil., Lead (c)
Lillian.....	Russell Gulch.....	Kingston Mining Company.....	299 McMann Bldg., Denver.....	Gold, Silver, Copper (c)
Martin Luther (a).....	Blackhawk.....	Harry Finan.....	Idaho Springs.....	Gold, Sil., Lead (c)
Nashville (a).....	Russell Gulch.....	Elmwood Mfg. and Ex. Co.....	Silver Plume.....	Gold, Sil., Copper
Palace.....	Blackhawk.....	Harry S. Blake.....	Blackhawk.....	Gold, Sil., Copper
Perigo.....	Rollinsville.....	Perigo M. and M. Co.....	Postor B'dg., Denver.....	Gold, Silver, Copper, Lead
Peru.....	Blackhawk.....	Thomas McGrath.....	Blackhawk.....	Gold, Silver, Lead, Copper, Zinc
Philadelphia.....	Central City.....	S. L. Berger & Co.....	Central City.....	Gold, Silver, Lead (c)
Pine Comb (a).....	Blackhawk.....	Central States Mines Co.....	649 State St., Quincy, Ill.....	(c)
Randolph Mill.....	Blackhawk.....	R. H. Hastie.....	Blackhawk.....	Gold, Sil., Copper
Russell.....	Russell Gulch.....	The Lima Mining Company.....	1607 Jasmine St., Denver.....	Gold, Sil., Copper
Smuggler (m).....	Rollinsville.....	New Life M. and M. Corp.....	7 Water St., Boston, Mass.....	Gold, Silver
Snowden.....	Blackhawk.....	Central States Mining Co.....	649 State St., Quincy, Ill.....	Gold
Spur Daisy.....	Central City.....	G. L. Stewart Company.....	Central City.....	Gold, Silver, Lead, Zinc
Wain.....	Central City.....	Alcio-Theora Mining Co.....	Central City.....	Gold, Silver, Lead, Copper, Zinc (c)
Wheeler.....	Blackhawk.....	O. C. Redick Mining Co.....	250 Omaha Nat. Bank Bldg., Omaha, Nebraska.....	Gold, Silver, Lead, Zinc

OPERATING TUNNELS IN GILPIN COUNTY, 1924

Name of Tunnel	Location	Operator	P. O. Address	Character of Product
Moffat Tunnel.....	East Portal.....	Hitchcock & Tinkler, Inc.....	1731 Arapahoe St., Denver.....	

OPERATING MINES IN GRAND COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Happy Dream (a).....	Parshall.....	A. Trapold.....	Parshall.....	Gold, Copper (c)
Ready Cash (a).....	Empire.....	Helping Hand M. and Dev. Co.....	1026 Gas and Elec. Bldg., Denver.....	Gold, Sil., Lead (c)

OPERATING TUNNELS IN GRAND COUNTY, 1924

Name of Tunnel	Location	Operator	P. O. Address	Character of Product
Moffat Tunnel.....	West Portal.....	Hitchcock & Tinkler, Inc.	1731 Arapahoe St., Denver.....	

• OPERATING MINES IN GUNNISON COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Akron.....	Whitepine.....	Akron Mines.....	Whitepine.....	Silver, Lead, Zinc
Carter.....	Ohio City.....	Carter Mines Company.....	Ohio City.....	Gold, Silver, Lead
Good Hope (a) (m).....	Jola.....	Good Hope Mining and Red. Co.....	834 10th St., Santa Monica, Calif.....	(c)
Morning Star.....	Whitepine.....	John C. Reagan.....	2305 West 6th St., Los Angeles, Calif.....	
North Star Group.....	Whitepine.....	Eastman & Towne.....	Whitepine.....	Gold, Silver, Lead
Roosevelt (m).....	Pitkin.....	Roosevelt Mines and Elec. Co.....	Pitkin.....	Gold, Silver
Tennessee.....	Pitkin.....	Tennessee Colorado Dev. Co.....	Old Hickory, Tenn.....	(c)

OPERATING MINES IN HINSDALE COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Belle of the West (a).....	Lake City.....	Belle of the West Mining Co.....	Lake City.....	Gold, Silver, Lead, Copper, Zinc
George the Third (a).....	Lake City.....	George the Third Mines Co.....	1006 Patterson Bldg., Denver.....	Gold, Silver, Lead, Copper, Zinc
Golconda.....	Lake City.....	Golconda Mines Cons., Inc.....	801 Guaranty Bldg., Indianapolis, Ind.....	Gold, Silver
Golden Piece.....	Lake City.....	San Cristobal Mining Co.....	Lake City.....	
Lellie (m).....	Lake City.....	William Dickinson.....	1331 Marquette Bldg., Chicago, Ill.....	Gold, Silver, Lead, Copper, Zinc
Ocean Wave.....	Lake City.....	Ocean Wave Min. and Red. Co.....	1555 Sherman St., Denver.....	

OPERATING MINES IN JACKSON COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Colorado Fluorspar (m).....	Cowdrey.....	Colorado Fluorspar Corp.....	Cowdrey.....	Fluorspar

(a) Operated for part of the year only. (c) No production in 1924. (m) Mill operated in connection with mine.

OPERATING MINES IN LAKE COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
A. V. Shaft.....	Leadville.	A. V. Leasing Company.	Leadville.	Manganese
A. Y. and Minnie (a).....	Leadville.	Bartell Lease.	406 E. 7th St., Leadville.	Lead (c)
Adams Shaft (a).....	Leadville.	Adams Lease.	Box 604, Leadville.	Silver, Lead
American.....	Leadville.	American Lease & Co.	324 W. 2nd St., Leadville.	Zinc
Baby Shaft.....	Leadville.	Mooseberg Lease.	Box 102, Leadville.	Silver, Lead, Manganese
Blaine.....	Leadville.	Forrest City Lease.	100 E. 10th St., Leadville.	Zinc
Cantbury Tunnel.....	Leadville.	Leadville Mine Development Co.	Leadville.	Silver, Iron (c)
Chautauqua.....	Leadville.	Joe Yapf.	East 5th St., Leadville.	Gold, Silver, Lead
Chrysolite No. 4 (a).....	Leadville.	Chrysolite Lease; John Holden & Co.	212 East 4th St., Leadville.	Silver, Lead, Zinc
Climax Molybdenum (m).....	Climax.	Climax Molybdenum Co.	61 Broadway, New York City	Manganese
Dolomite.....	Leadville.	John Joyce & Co.	301 E. 5th St., Leadville.	(c)
Evelyn Shaft.....	Leadville.	Tip Top and X-10-U-8 Mining Co.	Leadville.	Silver, Lead (c)
Fanchon.....	Leadville.	Frank Zaitz, Fanchon Lease.	520 W. Chestnut St., Leadville.	Gold, Silver
Fanny Rawlings.....	Leadville.	Kanawha Gold Mining Co.	Delaware Block, Leadville.	Gold, Silver, Lead
Fidelity (a).....	Leadville.	Fidelity Mining, Milling and P. Co.	313 South Phillip St., Philadelphia, Pa.	Copper, Zinc
Fortune.....	Leadville.	Fortune Mining Co.	1223 West 11th St., Kansas City, Mo.	Gold, Silver, Lead, Copper
Fortune and Penfield.....	Leadville.	Howard H. Utley, Trustee.	Florence.	Zinc
Garbutt.....	Leadville.	South Ibox Mines Co.	Bank Annex Bldg., Leadville.	Gold
Gilt Edge.....	Leadville.	O'Pay & Swanson.	229 E. 7th St., Leadville.	Silver, Lead, Zinc
Griffin.....	Leadville.	Griffin Mining Co., Lucien Smith.	Littleton.	Gold, Silver, Lead
Hagerman Shaft.....	Leadville.	Leadville Consolidated Mining Co.	74 Cortlandt St., N. Y. C.	Copper, Zinc
Henrietta.....	Leadville.	Henrietta Mines Company.	Box 533, Leadville.	Manganese
Home Extension.....	Leadville.	Cam W. Rogers.	Leadville.	Zinc
Ibox.....	Leadville.	Ibox Mining Co.	118 W. 3rd St., Leadville.	Silver
Izard.....	Leadville.	Izard Lease.	Box 606, Leadville.	Gold, Silver, Lead, Copper, Zinc
Lillian.....	Leadville.	The Lillian Mine.	500 W. 8th St., Leadville.	Gold, Silver, Lead
Little Alice.....	Leadville.	Two Mile High Mining Co.	1210 First Nat. Bank Bldg., Denver.	Zinc
Little Bob (a).....	Leadville.	Little Bob Lease.	329 W. 8th St., Leadville.	Gold, Silver, Lead, Zinc
Louisville.....	Leadville.	Louisville Mine.	319 Railway Ex. Bldg., Denver.	Gold, Silver, Lead
Mahala.....	Leadville.	Oxide Lease.	Box 604, Leadville.	Zinc (c)
Mikado Shaft.....	Leadville.	Mikado Lease.	801 Spruce St., Leadville.	Zinc (c)

Monarch.....	Leadville.....	Cleveland Mining Co.....	120 W. 8th St., Leadville.....	Silver, Lead, Zinc
Ponsardin.....	Leadville.....	Austin Blakey and Associates.....	Leadville.....	(c)
Pyrenee & Greenback.....	Leadville.....	Leadville Deep Mines Company.....	Bank Annex Bldg., Leadville.....	Zinc
Robert E. Lee.....	Leadville.....	Frank Zaltz, Robert E. Lee Lease.....	520 W. Chestnut St., Leadville.....	Zinc
Seventy-Six Shaft.....	Leadville.....	Iron Silver Mining Co.....	Leadville.....	Zinc
Shamus O'Brien.....	Leadville.....	New Denver City Mining Co.....	1343 High St., Denver.....	Zinc
Silver Spoon (a).....	Leadville.....	Shamus O'Brien Lease.....	Leadville.....	(c)
Snow Lode.....	Leadville.....	Silver Spoon Lease.....	412 W. 7th St., Leadville.....	(c)
St. Louis Tunnel.....	Leadville.....	Wilkesbarre Leasing Company.....	137 W. 6th St., Leadville.....	Gold, Silver, Lead
Star No. 5.....	Leadville.....	The St. Louis Tunnel.....	329 W. 8th St., Leadville.....	Silver, Lead, Man-
Tucson.....	Leadville.....	Star Consolidated Mines Co.....	Leadville.....	ganese
Valley (a).....	Leadville.....	Cramer & Company.....	Leadville.....	Silver, Lead, Zinc
Wilkesbarre.....	Leadville.....	Tucson Lease.....	140 S. Toledo Ave., Leadville.....	Gold, Silver, Lead
Yak Tunnel.....	Leadville.....	Luema Mining Company.....	1343 High St., Denver.....	Silver (c)
		Wilkesbarre Leasing Company.....	137 W. 6th St., Leadville.....	Gold, Silver, Lead
		Yak Mines, A. S. and R. Co.....	Leadville.....	

OPERATING MINES IN LA PLATA COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Idaho (a).....	Durango.....	Valley View Cons. Gold M. Co.....	Durango.....	(c)
Jumbo (a).....	May Day.....	Jumbo Mining Company.....	Durango.....	Gold, Silver (c)
Lady Eleanor (a).....	La Plata.....	Lady Eleanor Mining Company.....	La Plata.....	(c)
Little Nona.....	May Day.....	Mrs. John Welsh, et al.....	Forbes Junction.....	Gold, Silver
May Day.....	Hesperus.....	Cumberland Mines Company.....	Hesperus.....	Gold, Silver, Zinc

OPERATING MINES IN LARIMER COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Yellow Jacket (a) (m).....	Port Collins.....	Red Stone Gold Mining Co.....	1135 10th St., Denver.....	Gold (c)

OPERATING MINES IN MINERAL COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Bachelor.....	Creede.....	Dean & Gish.....	Creede.....	Silver
Bethel.....	Creede.....	Bethel M. and L. Co., Inc.....	3730 South Grand Ave., Los Angeles, Calif.....	Silver (c)
Colowood.....	Creede.....	Midwest Mining Company.....	1793 Infantry Ave., Detroit, Michigan.....	Silver (c)

(a) Operated for part of the year only.

(c) No production in 1924.

(m) Mill operated in connection with mine.

OPERATING MINES IN MINERAL COUNTY, 1924—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Commodore	Creede	Withrow Leasing Company	Creede	Silver
Nelson (a)	Creede	Mrs. M. J. Robinson	Creede	Silver (c)
New York, Last Chance	Creede			
Volunteer	Creede	Morgan & Sloan	Creede	Gold, Silver, Lead
Wagon Wheel Gap (m)	Wagon Wh. Gap	Colorado Fuel and Iron Co.	820 Boston Bldg., Denver	Fluorspar

OPERATING MINES IN OURAY COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Atlas (m)	Ouray	Atlas M. and M. Co.	Ouray	Gold, Silver
Bachelor	Ouray	Bachelor-Khedive Mines Co.	Ouray	
Bachelor	Ouray	John Zupet and Associates	Ouray	
Gustin (a)	Ouray	Celeste Fattor & Co.	Ouray	(c)
Thistle-down	Ouray	White Mountain Mining Co.	363 L. and J. Bldg., Waterloo, Iowa	Fluorspar
Wanakah	Ouray	Pennsylvania Mines Co.	1314 Farmers Bank Bldg., Pittsburgh, Pa.	Gold, Sil., Copper

OPERATING MINES IN PARK COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Etna (a)	Alma	A. H. Reynolds	Centerburg, Ohio	(c)
Hock Hocking (a)	Alma	Hock Hocking Mines Company	509 Exchange Bldg., Denver	Gold, Sil., Lead (c)
Little Fanny	Alma	M. L. Miller Leasing Co.	Alma	Gold, Silver, Zinc
London	Alma	London Gold Mines Co.	Colorado Springs	Gold
Missouri	Cassells	C. M. Snyder	Cassells	Gold, Silver, Lead, Copper, Zinc
Paris and Excelsior	Alma	Mt. Bross Ore Co.	Alma	Gold
Russia (a)	Alma	Lincoln Cons. Mining Co.	Alma	Gold, Silver, Lead, Zinc (c)
Sweet Home	Alma	Sweet Home Gold and Silver M. Co.	408 Tramway Bldg., Denver	Gold, Silver, Lead, Copper, Zinc

OPERATING MINES IN PITKIN COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Cowenhoven Tunnel	Aspen	Aspen Mines Company	1103 People's Bank Bldg., Pittsburgh, Pa.	Silver, Lead, Zinc
Double Decker (a)	Carbondale	Frank Denycke and Associates	Carbondale	Lead (c)

Hope Tunnel.....	Aspen.....	Hope M., Milling and Leasing Co.....	Aspen.....	Silver
Hurricane (a).....	Aspen.....	Hurricane Development Co.....	Aspen.....	Silver, Lead (c)
Jewell (a).....	Aspen.....	Jewell Mining Co.....	Aspen.....	Silver (c)
Midnight.....	Aspen.....	Midnight Mining Co.....	Aspen.....	Sil., Lead, Zinc (c)
Newman Tunnel.....	Aspen.....	Newman Mining, M. and Leasing Co.....	Aspen.....	Silver, Lead
Park Tunnel.....	Aspen.....	Park Tunnel, Mining and Milling Co.....	Aspen.....	Silver, Lead, Zinc, Manganese
Shamrock (a).....	Aspen.....	DuBe Lease.....	Aspen.....	(c)
Veteran Tunnel.....	Aspen.....	The Spar Con. Mining Co.....	Aspen.....	Silver, Lead

OPERATING MINES IN ROUTT COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Blue Jay.....	Hahns Peak.....	Charles E. Blackburn.....	Hahns Peak.....	Gold, Silver (c)
Buffalo Group (a).....	Columbine.....	Buffalo Mines Company.....	Columbine.....	Gold, Silver, Lead, Copper, Zinc (c)
Master Key (a).....	Columbine.....	Thos. E. Klechner.....	Columbine.....	
Royal Flush.....	Columbine.....	Hahns Peak Gold M. and M. Co.....	Room 3, Algonia Bldg., Oshkosh, Wisconsin.....	Gold, Silver, Lead, Zinc (c)

OPERATING MINES IN SAGUACHE COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Baltimore (a).....	Bonanza.....	Denver Bonanza Mining Co.....	411 Central Sav. Bank Bldg., Denver.....	Sil., Lead, Zinc (c)
Cocomongo (m).....	Bonanza.....	Howard H. Utley, Trustee.....	Florence.....	Gold, Silver, Lead, Zinc
Orient.....	Mineral Hot Spgs.....	Colorado Fuel and Iron Co.....	820 Boston Bldg., Denver.....	Iron

OPERATING MINES IN SAN JUAN COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Gold King (a).....	Silverton.....	Gold King Mines Corporation.....	Silverton.....	Gold, Sil., Copper
Henrietta, Joe and John (a).....	Gladstone.....	Golden Consolidated Mines Co.....	711 Colorado Bldg., Denver.....	(c)
Highland Mary (a).....	Howardsville.....	Highland Leasing Co.....	Silverton.....	Gold, Silver, Lead, Zinc
Kansas City (a).....	Silverton.....	Paul B. Walker.....	Ironton.....	(c)

(a) Operated for part of the year only. (c) No production in 1924. (m) Mill operated in connection with mnc.

OPERATING MINES IN SAN JUAN COUNTY, 1924—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Little Nation (m)	Howardsville	Little Nation Mining Co.	423 Lee Bldg., Kansas City, Mo.	Gold, Silver, Lead, Copper, Zinc
Mountain Queen	Animas Forks	Eureka M. and M. Co.	1210 First Nat. Bk. B., Denver	Silver, Lead, Zinc
Old Green Mountain	Howardsville	China Brothers	Howardsville	Gold, Silver, Lead, Zinc
Philadelphia—Little Fannie	Howardsville	Wm. A. Davis and Associates	Silverton	Gold, Silver, Lead, Copper, Zinc
Pride of the West (a)	Howardsville	Alfred W. Harrison	Silverton	Gold, Silver, Lead
Sunnyside (m)	Eureka	Sunnyside M. and M. Co.	55 Congress St., Boston, Mass.	Gold, Silver, Lead, Copper, Zinc

OPERATING MINES IN SAN MIGUEL COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Alta (m)	Telluride	Belmont-Wagner Mining Co.	Telluride	Gold, Silver, Lead
Black Bear	Telluride	Colorado Superior Mining Co.	Telluride	Gold, Silver, Lead, Copper
Butterfly-Terrible (m)	Ophir	Matterhorn M. and M. Co.	Ophir	Gold, Silver, Lead, Copper, Zinc
Carbonero	Ophir	Ophir-Colorado Mines Co.	519 Exchange Nat. Bank Bldg., Colorado Springs	Gold, Silver, Lead, Copper, Zinc
Cimarron (m)	Telluride	John M. Wagner	Telluride	Gold, Silver, Lead
Mountain Flower (a)	Telluride	Mountain Flower Gold M. M. and P. Company, F. G. Sorter	502 Corby-Forsce Bldg., St. Joseph, Mo.	Gold, Silver, Lead, Copper, Zinc
Sheridan Crosscut	Telluride	Sheridan Crosscut Mining Co.	Ophir	Gold, Silver, Lead, Copper, Zinc
Silver Bell	Ophir	Ophir Bondholders Committee	Telluride	Gold, Silver, Lead, Copper
Smuggler-Union (m)	Telluride	Smuggler Union Mining Co.	Telluride	Gold, Silver, Lead, Copper
Tomboy (m)	Telluride	Tomboy Gold Mines Co., Ltd.	Telluride	Gold, Silver, Lead, Copper

OPERATING MINES IN SUMMIT COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
Detroit	Breckenridge	Detroit Leasing Company	Breckenridge	Gold, Silver, Lead, Zinc
Eureka (a)	Breckenridge	Eureka Leasing Company	Breckenridge	Zinc (c)
Extension	Breckenridge	New Extension Mining Corp.	Breckenridge	Gold

Four-Most (a).....	Frisco.....	Frisco.....	Gold, Silver (c)
Fox Lake (a).....	Breckenridge M. and Cyanide Co.....	856 So. Gilpin St., Denver.....	Gold, Silver, Lead, Zinc, Bismuth (c)
Fredonia.....	Fredonia Mines, Inc.....	Gas and Elec. Bldg., Denver.....	Lead, Copper (c)
Hicks.....	Breckenridge.....	342 Madison Ave., N. Y. C.....	Gold, Silver, Lead
Johannesburg Tunnel.....	Aco Mining Company.....	Breckenridge.....	Gold, Silver, Lead
Juniper Tunnel.....	Ed. Jones.....	Breckenridge.....	Gold, Silver, Lead
King Solomon.....	O. N. Bribach.....	Breckenridge.....	Gold, Silver, Lead
Minnie (a).....	King Solomon Mining Co.....	526 Mining Ex. Bldg., Denver.....	Gold, Silver, Lead
Missouri (a).....	Minnie Leasing Company.....	Breckenridge.....	Gold, Silver, Lead
Owl Group.....	Detroit Leasing Company.....	1006 Patterson Bldg., Denver.....	Lead, Zinc (c)
Prize Box.....	Gibson Hill Development Co.....	Breckenridge.....	Lead
Royal Tiger (m).....	O. N. Bribach.....	Tiger.....	Gold, Silver, Lead
Warriors Mark.....	Royal Tiger Mines Company.....	342 Madison Ave., N. Y. C.....	Silver (c)
Wellington (m).....	Aco Mining Company.....	1000 Grand Ave., Temple, Kansas City, Mo.....	Gold, Silver, Lead, Zinc

OPERATING MINES IN TELLER COUNTY, 1924

Name of Mine	Location	Operator	P. O. Address	Character of Product
American Eagles.....	Victor.....	Stratton Lease.....	Victor.....	Gold
Anaconda Tunnel.....	Cripple Creek.....	Anaconda Leasing Co.....	202 Boston Bldg., Denver.....	Gold
Bertha B.....	Victor.....	Bertha B. Leasing Co.....	208 S. 3rd St., Victor.....	Gold (c)
Blocks 7, 8, 9 School Section.....	Victor.....	Coop. Mining and Dev. Co.....	123 E. Colo. Ave., Colorado Springs.....	Gold
C. K. and N.....	Cripple Creek.....	C. K. and N. Ext. M. and L. Co.....	1006 Patterson Bldg., Denver.....	Gold
Conundrum.....	Cripple Creek.....	Phoenix Deep Mining Co.....	Denver.....	Gold
Cresson.....	Cripple Creek.....	Cresson Co. G. M. and M. Co.....	Cripple Creek.....	Gold (c)
Dante Gold Sovereign.....	Victor.....	Reckor, Dimick Syndicate.....	Victor.....	Gold (c)
Dead Shot (a).....	Cripple Creek.....	One Hundred Gold Mining Co.....	810 Patterson Bldg., Denver.....	Gold (c)
Doctor Jack Pot.....	Cripple Creek.....	Doctor Jack Pot M. Co.....	Cripple Creek.....	Gold
El Paso (a).....	Cripple Creek.....	Allen L. Burris M. and D. Co.....	Cripple Creek.....	Gold
Fauntleroy.....	Cripple Creek.....	McClanahan Gold Mining Co.....	1447 Tremont St., Denver.....	Gold
Forest Queen (a).....	Cripple Creek.....	John Connors Investment Co.....	618 Lafayette St., Denver.....	Gold (c)
Gold Colt and Dillon.....	Victor.....	Granite Gold Mining Co.....	Mining Exchange Bldg., Colorado Springs.....	Gold
Gold King.....	Cripple Creek.....	Gold King Mining Co.....	Box 123, Colorado Springs.....	Gold
Hiawatha.....	Cripple Creek.....	A. J. Wirebaugh.....	Cripple Creek.....	Gold
Ironclad.....	Cripple Creek.....	Iron Glad Hill M. and Dev. Co.....	509 Market St., Kenosha, Wis.....	Gold
Jay Gould (a).....	Cripple Creek.....	Jay Gould Mining Co.....	Cripple Creek.....	Gold (c)
Jerry Johnson.....	Cripple Creek.....	Jerry Johnson Gold M. Co.....	Cripple Creek.....	Gold
Mary McKinney.....	Cripple Creek.....	Mary McKinney Mining Co.....	Box 1346, Cripple Creek.....	Gold
Pinto and Burns Shafts.....	Cripple Creek.....	Free Coinage Gold M. Co.....	Cripple Creek.....	Gold

(a) Operated for part of the year only.

(c) No production in 1924.

(m) Mill operated in connection with mine.

OPERATING MINES IN TELLER COUNTY, 1924—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Portland (m).....	Victor.....	Portland Gold Mining Co.....	Mining Exchange Bldg., Colorado Springs.....	Gold
Pride of Cripple Creek.....	Cripple Creek.....	L. S. Cox & Co.....	135 W. Eaton Ave., Cripple Creek.....	Gold
Puzzle.....	Cripple Creek.....	Green & Goldstein.....	Cripple Creek.....	Gold (c)
Sangre de Cristo.....	Cripple Creek.....	Reclamation Metal Mines Co.....	7 No. Tejon St., Colo. Springs.....	Gold
Thompson.....	Elkton.....	Dan Hill and Associates.....	Elkton.....	Gold
Tonopah Ajax.....	Victor.....	Tonopah Ajax Mining Co.....	570 Bullitt Bldg., Philadelphia, Pa.....	Gold
United Gold Mines.....	Cripple Creek.....	United Gold Mines Co.....	Cripple Creek.....	Gold
Victor.....	Independence.....	Al. Osberg.....	Independence.....	Gold

OPERATING QUARRIES AND CLAY PITS, 1924

Town	County	Name	Product	Operator	P. O. Address
Salida	Chaffee	Bowen	Granite	E. T. Bowen	Box 472, Salida
Salida	Chaffee	Colorado Granite	Granite	Colorado Granite Mfg. Co.	Box 472, Salida
Monarch	Chaffee	Doctor	Limestone	Drs. Cochens and Shafer	Out West Bldg., Colo. Springs
Monarch	Chaffee	French	Limestone	J. G. French	Garfield
Salida	Chaffee	Mt. Princeton	Limestone	Mt. Princeton Granite Co.	6th and Curtis Sts., Denver
Monarch	Chaffee	Oshkosh	Limestone	A. Q. Tomlin and Earl Beck	Garfield
Salida	Chaffee	Salida Granite	Granite	Salida Granite Corporation	Salida
Castle Rock	Douglas	Castle Yard	Plastic Clay	A. C. Nipko	Castle Rock
Castle Rock	Douglas	Johnson Clay	Plastic Clay	E. L. Scott	Castle Rock
Larkspur	Douglas	Ware Pit	Plastic Clay	W. S. Hawn	Castle Rock
Calhan	El Paso	White Clay Pit	Fire Clay	R. L. Urquhart	Larkspur
Manitou	El Paso	Manitou	Limestone	Western Lime Company	305 Sugar Bldg., Denver
Canon City	Fremont	Burnito	Sandstone	J. S. Alexander	Box 624, Canon City
Caliste	Fremont	Caliste	Limestone	Colorado Fuel and Iron Co.	Box 624, Canon City
Coaldale	Fremont	Coaldale	Gypsum	T. A. Gilray	820 Boston Bldg., Denver
Concrete	Fremont	Concrete	Limestone, Shale	U. S. Portland Cement Co.	305 Ideal Bldg., Denver
Canon City	Fremont	Dolomite	Dolomite	Thomas & Frankenberg	Canon City
Canon City	Fremont	Flint and Clinax	Fire Clay and Silica	Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Grape Creek	Ganister	L. D. Christison	623 Griffin Ave., Canon City
Salida	Fremont	Lantz	Granite	Rocky Mountain Granite Co.	Box 297, Salida
Salida	Fremont	McLaughlin	Granite	Nan T. McLaughlin	1015 Osage St., Denver
Howard	Fremont	Caliste	Limestone	Colorado Lime Corporation	421 Denham Bldg., Denver
Salida	Fremont	Otis	Limestone	Colorado Lime Corporation	421 Denham Bldg., Denver
Cortopaxi	Fremont	Peter Noon	Granite	Peter Noon	Cortopaxi
Portland	Fremont	Cement Company	Limestone	Colorado Portland Cement Co.	507 Ideal Bldg., Denver
Rito	Fremont	Rose Pink	Granite	Salida Granite Corporation	Salida
Canon City	Fremont	Sky Line	Fire Clay	Jewett Fire Brick Co.	810 Whipple Ave., Canon City
Canon City	Fremont	Texas Creek	Granite	J. A. Lamb	Texas Creek
Wellsville	Fremont	Wellsville	Granite	Colorado Mar. and Stone Co.	740 Washington St., Denver
Glenwood Spgs.	Garfield	Holly Sugar and Meadows	Limestone	Midwest Construction Co.	Box 148, Grand Junction
Marble	Gunnison	Curraha	Marble	Curraha Yule Marble Co.	Marble
Marble	Gunnison	Stauss	Marble	Colorado Marble Co.	30 Andrews Bldg., Buffalo, N. Y.
Marble	Gunnison	Yule	Marble	Yule Marble Co. of Colorado	Marble
Golden	Jefferson	Fire Clay	Fire Clay	Golden Clay Mining Co.	Golden
Golden	Jefferson	Golden	Fire Clay	Denver Fire Clay Co.	Box 1107, Denver
Golden	Jefferson	Johnson	Fire Clay	S. J. Anderson & Co.	401 Kalamath St., Denver
Golden	Jefferson	Oranhood & Binder	Fire and Plastic Clay	Denver Pressed Brick Co.	219 Temple Court Bldg., Denver
Golden	Jefferson	Parfet	Fire and Plastic Clay	George W. Parfet	Golden
Golden	Jefferson	School Land	Fire Clay	Thomas Bennetts	Golden
Golden	Jefferson	Strah	Fire and Plastic Clay	Denver Sewer P. and C. Co.	Denver
Golden	Jefferson	Sweet Tunnel	Fire Clay	James Pomeroy	Box 507, Golden
Fire Clay Spur	Jefferson	Wilson	Fire Clay	C. F. Wilson	Golden

OPERATING QUARRIES AND CLAY PITS, 1924—Concluded

Character of Plant Arsenic and Cadmium Refinery.....	Town	Location County	Operator	P. O. Address
Golden.....	Jefferson	Basalt.....	J. W. Lawrence & Co.....	Golden
Rockwood.....	La Plata	Bells.....	John Bell.....	Rockwood
Laporte.....	Larimer	Fort Collins	Fort Collins Limestone Co.....	Virginia Apartments, Ft. Collins
Laporte.....	Larimer	Ingleside.....	Fred Acosta.....	Ingleside
Ingleside.....	Larimer	Limestone.....	Den Furones.....	Laporte
Bellvue.....	Larimer	Limestone.....	Josefson Brothers.....	Bellvue
Laporte.....	Larimer	Limestone.....	John Lewandowski.....	Laporte
Ingleside.....	Larimer	Limestone.....	James Vangle.....	Ingleside
Bellvue.....	Larimer	Limestone.....	O. J. Walter.....	Bellvue
Trinidad.....	Las Animas	Trinidad Shale Pit.....	Trinidad Brick and T. Co.....	Trinidad
Pueblo.....	Pueblo	Clay Pit.....	Summit Pressed B. and T. Co.....	14th and Water Sts., Pueblo
Lime.....	Pueblo	Lime.....	Colorado Fuel and Iron Co.....	820 Boston Bldg., Denver
Pueblo.....	Pueblo	Livesey.....	William Olson & Son & Matt Rocco.....	2217 Elizabeth St., Pueblo
Pueblo.....	Pueblo	Turkey Creek.....	Pueblo Clay Products Co.....	1525 Court St., Pueblo
Pueblo.....	Pueblo	Turkey Creek.....	Turkey Creek Stone, Clay and Gypsum Co.....	302 Central Block, Pueblo
Mustang.....	Pueblo	Vulcan.....	Fire and Plastic Clay Standard Fire Brick Co.....	Pueblo

OPERATING MILLS AND SMELTERS, 1924

Character of Plant Arsenic and Cadmium Refinery.....	Town	Location County	Operator	P. O. Address
Cyanidation.....	Colorado Springs	El Paso.....	American Smelting and Refining Company.....	704 Equitable Bldg., Denver
Zinc Oxide Mfg.....	Canon City	Fremont.....	Golden Cycle Mining and Reduction Company.....	Box 86, Colorado Springs
Zinc Oxide Mfg.....	Florence	Fremont.....	Empire Zinc Company.....	160 Front St., N. Y. City
Chemical Ore Reduction.....	Rifle	Garfield.....	River Smelting and Ref. Co.....	722 Chestnut St., St. Louis, Mo.
Lead Smelter.....	Leadville	Lake.....	U. S. Vanadium Co.....	829 Synes Bldg., Denver
Concentration.....	Leadville	Lake.....	American Smelting and Refining Company.....	704 Equitable Bldg., Denver
Zinc Oxide Mfg.....	Leadville	Lake.....	Gustavus Scsingshaus & Co.....	Equitable Bldg., Denver
Lead Smelter.....	Durango	Lake.....	Western Zinc Oxide Co.....	Leadville
Zinc Oxide Mfg.....	Pueblo	Pueblo.....	American Smelting and Refining Company.....	704 Equitable Bldg., Denver
Ore Sampler.....	Victor	Teller.....	United States Zinc Co.....	120 Broadway, N. Y. City
Compressed Air Plant.....	Cripple Creek	Teller.....	Eagle Samplers, Inc.....	Box 629 Victor
			Teller County Air Co.....	Cripple Creek

OPERATING PLACER MINES AND DREDGES, 1924

Name	Town	County	Operator	P. O. Address
Gomer Placer.....	Blackhawk.....	Gilpin.....	W. E. Gomer & Co.....	Blackhawk
Mt. Elbert Dredge (a).....	Leadville.....	Lake.....	Mt. Elbert Gold Dredging Co.....	Leadville
Fairplay Dredge.....	Fairplay.....	Park.....	South Park Dredging Co.....	433 California St., San Francisco, Calif.
Gold Valley Placer (a).....	Clark.....	Routt.....	Gold Valley Mining Co.....	431 Cooper Bldg., Denver
Bemrose Bostwick Placer.....	Alma.....	Summit.....	O. W. Hale.....	Alma
Blue River Dredge.....	Breckenridge.....	Summit.....	Blue River Placer Mining Co.....	10 Independence Bldg., Colorado Springs
Tonopah Dredge.....	Breckenridge.....	Summit.....	Tonopah Placers Co.....	572 Bullitt Bldg., Philadelphia, Pa.

(a) Operated for part of the year only.

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